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WHO OWNS THE SKIES?

AD COELUM, PROPERTY RIGHTS, AND STATE SOVEREIGNTY

Laura K. Donohue

Cuius est solum, eius est usque ad coelum et ad inferos.

Translation: Whoever owns land it is theirs up to the heavens and down to hell.

—Franciscus Accursius

In *Glossa Ordinaria* (1220–1250 CE), a seminal work that rendered earlier scholarship obsolete and for 500 years served as the authoritative statement of Justinian law, Franciscus Accursius established that whoever owned the land controlled everything from the heavens above to hell below.¹ It was far from a novel concept. For more than a millennium, the concept *ad coelum* had distinguished between the skies aloft and terrestrial matters. In his 54 BCE epic poem embracing Epicurean philosophy, *De Rerum Natura*, Titus Lucretius Carus equated *ad coelum* with the sky, currents of air above the earth, and the heavens themselves.² Virgil’s *Aeneid*, written in 19 BCE, treated *ad coelum* in similar fashion.³ *De caelo servare* came to mean to observe lightning (as an omen) and *de caelo tactus* to be struck by lightning, even as *toto caelo* came to mean something like “utterly”—that is, to the full extent of the heavens.⁴ A simple principle applied: land ownership conveyed control of three-dimensional space.

The Justinian concept worked its way into English common law and, thence to the colonies, for incorporation into Anglo-American jurisprudence. It was only in the 20th century, with the advent of air travel, that limits in the form of effective possession began to appear. An uneasy compromise of 500 feet was proposed, with property owners’ rights below that level secured and subject only to state and not federal domain.

¹ For further discussion of the several forms that the maxim has taken over time, see D. E. Smith, “The Origins of Trespass to Airspace and the Maxim “Cujus Est Solum Ejus Est Usque Ad Coelum,” *Trent Law Journal* 6 (1982): 33, 36.

² See Titus Lucretius Carus, *De Rerum Natura*, 1.9 (referring to light in the sky: *placatumque nitet diffuso lumine caelum*); 6.650 (referring to the infinite universe and one sky, *caelum unum*); 6.1119–24 (considering the movement of air as bringing disease and destruction: e.g., *fit quoque ut, in nostrum cum venit denique caelum, / corrumpat reddatque sui simile atque alienum*); 6.8 (*divulgata vetus iam ad caelum gloria fertur*); 6.669 (*flamescere caelum*). Also note that in 350 BCE Greek philosopher Aristotle laid out the locomotion of the heavens and heavenly bodies, in contrast to the movement of terrestrial elements in *De Caelo et Mundo*.

³ P. Virgilius Maro, *Aeneid*, 4.201–2 (*ipse diem noctemque negat discernere caello / nec meminisse viae media Pallinurus in unda*), 4.585–87 (*nam neque erant astrorum ignes nec lucidus aethra / siderea polus, obscuro sed nubila caelo, / et lunam in nimbo nox intempesta tenebat*).

⁴ Peter Bullions, *A Copious and Critical Latin-English Dictionary: Abridged and Re-arranged* (New York: Sheldon, 1866), p. 183.

In light of the history of the doctrine of *ad coelum*, as well as the states' preeminent role (secured by the Tenth Amendment) in regulating property and airspace up to the 500-foot level, it is remarkable that the federal government has begun to claim that it controls everything above the blades of grass. In an article aimed at "busting myths about the FAA," the Federal Aviation Administration (FAA) asserted, "The FAA is responsible for the safety of U.S. airspace from the ground up."⁵ Jim Williams, the head of the FAA's unmanned aircraft systems (UAS) Integration Office, baldly asserted, "If you are flying in the national airspace system, FAA regulations apply to you. The definition of the national airspace system is anywhere where aircraft can safely navigate. So by definition then, these quadcopters are what have extended the national airspace down to the ground."⁶ In a response to a motion to dismiss on a case involving a drone operating at altitudes of less than 400 feet above the University of Virginia, the FAA administrator similarly asserted, "the FAA's mandate to regulate the use of all airspace necessary to 'ensure the safety' of aircraft, for 'protecting and identifying' those aircraft and for 'protecting individuals on the ground' is not confined solely to the 'navigable airspace.'"⁷ This chapter challenges those statements, demonstrating that history and law establish that property owners, and the states, control the airspace adjacent to the land.

<a head>Ad Coelum in English Common Law</a head>

King Edward I's invitation to Accursius's son, Franciscus, to come to England paved the way for the incorporation of *ad coelum* into English common law. In 1274, Franciscus took up the post at Oxford, lecturing on Roman Law.⁸ Courts accredit that moment as the point at which the term entered the legal lexicon.⁹ English treatise writers went on to acknowledge the importance of *ad coelum*. In his *First Institute of the Laws of England*, the prominent jurist Sir Edward Coke observed in relation to *terra*, "And lastly the hearth hath in law a great extent upward, not only of water as hath been said, but of aire, and all other things even up to heaven, for *cujus est solum ejus est usque ad coelum*, as it is holden."¹⁰ He cited two cases related to a dispute between a landlord and tenant challenging who, under the lease in question, owned six young goshawks.¹¹ A third case centered on the rights held by the Bishop of London to herons

⁵ FAA, "Busting Myths about the FAA and Unmanned Aircraft," March 7, 2014.

⁶ Gregory S. McNeal, "The Federal Government Thinks Your Backyard Is National Airspace and Toys Are Subject to FAA Regulations," *Forbes*, November 18, 2014.

⁷ Administrator's Response to Respondent's Motion to Dismiss at 4–5, *Huerta v. Pirker*, No. CP-217 (NTSB Nov. 1, 2013), at 5, http://www.suasnews.com/wp-content/uploads/2013/11/FAA_Response.pdf.

⁸ C. Lincoln Bouvé, "Private Ownership of Airspace," *Air Law Review* 1 (1930): 232; Smith, "The Origins of Trespass."

⁹ *Bury v. Pope*, (1587) 1 Cro Eliz 118, 78 ER 375, n.8 ("Nota: cuius est solum ejus est summitas usque ad coelum. Temp Ed 1.")

¹⁰ Edward Coke, "Of Real Property, and First or Corporeal Hereditaments of Land," *The First Part of the Institutes of the Lawes of England* (London: Rawlins, Roycroft, and Sawbridge, 1684).

¹¹ 22 Henry VI 59; 10 Edward IV 14.

and shovelers nesting in trees that he had leased.¹² The court reasoned that ownership of the land includes the roots of the trees—and the branches in the airspace above. In each situation, the owner maintained an interest in the full use and enjoyment of the property.¹³

At the time that Coke wrote, there was a sharp distinction in the law between the right in land (i.e., arising out of the ownership of the land), and the right of peaceful enjoyment of property. For the former, certain rights attained to the dignity of ownership or possession. Others—such as piscary and turbary, rights of ingress and egress, ancient rights of firebote and fencebote, and the right of escheat (which belonged to the Crown)—did not.¹⁴ Violating the airspace above the land constituted an interference in the enjoyment of the property.

Two cases reported by Coke followed his exposition in the *Institutes*. In *Penruddock's Case* a writ of *quod permittat prosternere*, commanding that the defendant allow the plaintiff to abate a nuisance or appear in court and show cause why not, attached.¹⁵ Under the writ, plaintiffs were entitled to a judgment for abatement and corresponding damages. In this case, the court determined that rain draining from an overhanging building adjacent to the plaintiff's land was a nuisance.¹⁶ In 1611, the court again applied the ancient writ of *quod permittat* in *Baten's Case* to find an overhang to be a nuisance and ordered its abatement.¹⁷

For centuries, the maxim *ad coelum* stood, recognizing property owners' rights to the airspace above their land. According to the facts of the case, courts alternately found either that a trespass had occurred or that a nuisance resulted from incursions into the space above the property. In 1753, Sir William Blackstone delivered a series of lectures at Oxford, published in four volumes in 1765–1769. In volume II of the *Commentaries on the Law of England*, Blackstone explained the importance of *ad coelum* for understanding the rights conveyed in real property:

Land hath also, in its legal signification, an indefinite extent, upwards as well as downwards.

Cuius est solum, eius est usque ad coelum, is the maxim of the law, upwards; therefore no man may erect any building, or the like, to overhang another's land: and, downwards, whatever is in a

¹² 14 Henry VIII 12.

¹³ George B. Logan, "Aviation and the Maxim *Cujus Est Solum*," *St. Louis Law Review* 16 (1931): 303, 306. Note that much of the text in the article was taken from *Swelland v. Curtiss Airports Corporation*, 41 F.2d 929 (N.D. Ohio, 1930).

¹⁴ Logan, "Aviation and the Maxim *Cujus Est Solum*," p. 305.

¹⁵ *Penruddock's Case*, Trin 40 Eliz 101 [3 Coke 205 (1597)].

¹⁶ Reports of Sir Edward Coke, Knt: in English, in *Thirteen Parts*, vol. 3, *Penruddock's Case*, Trin 40 Eliz 101.

¹⁷ *Baten's Case*, 9 Coke 54 (1611). See also *Bury v. Pope*, (1587) Cro Eliz 118 [1653], ER 382, (1653) Cro Eliz 118, (1653) 78 ER 375 (B) (citing the maxim).

direct line between the surface of any land, and the center of the earth, belongs to the owner of the surface.¹⁸

The control of the land and the air above it meant that adjacent landowners were restricted in what they could do above their neighbor's property as well as below it. There was no limited right of access conveyed by the neighbor's interests. This was, for Blackstone, aptly illustrated in mining areas where such rights were well-recognized. He continued, "the word 'land' includes not only the face of the earth, but everything under it, or over it."¹⁹ So when *land* was conveyed, everything else—air, water, houses, and mines below the surface—transferred.²⁰

The 17th- and 18th-century cases dealt largely with matters related to hunting, things falling on property from above or outside the boundaries, and stationary structures overhanging adjacent land. But in 1783 an entirely new category emerged: Joseph-Michel and Jacques-Étienne Montgolfier invented the *globe aérostatique*, raising questions associated with overflight. An 1815 case presaged the legal questions that would later arise: *Pickering v. Rudd* addressed a landowner's decision to cut back his neighbor's Virginia creeper that had grown onto his house and to then hang a board which projected across the property line. Lord Ellenborough in *dicta* infamously posed a *reductio ad absurdum*: if the board be a trespass, might an aeronaut be "liable to an action of *trespass quare clausum fregit* at the suit of the occupier of every field over which his balloon passes in the course of his voyage"?²¹ He compared firing a bullet over land to circumvention of a balloon, proposing that the later might constitute a nuisance, but not a trespass.

English courts flatly rejected Ellenborough's reasoning and found interference in the airspace above land to be either a nuisance or a trespass (and sometimes both), upholding the rule from antiquity that protected property owners in the use and enjoyment of their property. In 1845, for instance, in *Fay v. Prentice*, a cornice jutting out over a neighboring garden and funneling rainwater onto the adjacent land constituted a nuisance.²² Judge Coltman, citing *Baten's Case*, determined that it did not matter whether water had actually caused damage. The mere overhang was sufficient. By it, the plaintiff "had been greatly annoyed and incommoded in the use, possession, and enjoyment of his messuage, garden-ground,

¹⁸ William Blackstone, *Commentaries on the Laws of England*, vol. 2 (London, G.W. Childs., 1866), p. 18.

¹⁹ William Blackstone, *Commentaries on the Laws of England*, vol. 2 (Philadelphia, J.B. Lippincott Col., 1893), p. 18.

²⁰ Blackstone, *Commentaries*, vol. 2 (1893), p. 18.

²¹ *Pickering v. Rudd*, (1815) 4 Camp 219 (writing, "Nay, if this board overhanging the plaintiff's garden be a trespass, it would follow that the aeronaut is liable to an action of trespass *quare clausum fregit* at the suit of the occupier of every field over which his balloon passes in the course of his voyage.")

²² *Fay v. Prentice and Another*, [1845] ER 79, (1845) 1 CB 828, (1845) 135 ER 769.

&c.”²³ Judges Maule and Cresswell concurred.²⁴ In 1855, the Court of the Exchequer of England determined that wires above property occupied the land beneath.²⁵ The judge, Sir Charles Edward Pollock, explained, “Land extends upwards as well as downwards, and whether the wires and posts are fixed above or below the surface, they occupy a portion of the land.”²⁶

Case after case followed course. In the 1865 case of *Kenyon v. Hart*, a hunter shot a cock pheasant that was flying over his neighbor’s property and then went to retrieve it.²⁷ Justice Blackburn took the occasion to remark on Ellenborough’s reasoning, “I understand the good sense of that doubt but not the legal reason of it.”²⁸ Five years later, in *Corbett v. Hill*, the court considered a conveyance on sale that established an underground flying freehold—that is, a section of freehold property extending below ground.²⁹ The plaintiff, who owned two houses next door to each other, sold the adjoining property which supported one of the rooms of the house that he retained. Sir William James Montgomery-Cuninghame determined that the buyer (the owner of the second property) had a property right in the air above his land, making any intrusion in the space a trespass.³⁰ That same year, three of four judges ruled an equine owner negligent when his horse kicked through a fence and thereby injured a horse on a neighbor’s property.³¹ The justices (one citing *ad coelum*) agreed that by entering the airspace above the ground, the horse had trespassed on the adjoining land.

In 1880, an action was brought to restrain the 12th Middlesex Volunteer Corps from shooting guns on Wimbledon Common to the detriment of an adjacent landowner’s property.³² According to the suit, “splashes of bullets and flattened bullets fell on the plaintiff’s land, so as to substantially affect the ordinary use and enjoyment of the property.”³³ The defendants in *Clifton v. Bury* claimed that the Putney and Wimbledon Commons Act, 1871, reserved the land for public use, that even on the admitted facts no trespass had actually occurred, and that only those who actually fired the weapons might be held responsible.

²³ 1 CB 838 (Coltman, J.).

²⁴ 1 CB 838–41 (Maule, J.); 1 CB 840–41 (Cresswell, J.).

²⁵ *Electric Telegraph Co. v. Overseers of the Poor of the Township of Salford*, 11 Ex 181 (1855).

²⁶ 11 Ex 189.

²⁷ *Kenyon v. Hart*, [1865] EWHC QB J102; 122 ER 1188; 6 B & S 249; 32 LJR 87 (1865).

²⁸ EWHC QB J102.

²⁹ *Corbett v. Hill*, (1870) LR 9 Eq 671, (1870) 39 CJCh 547, (1870) 2 LT 263, (1870) 7 Digest (Repl) 267.

³⁰ LR 9 Eq 671.

³¹ *Ellis v. Loftus*, (1874) LR 10, CP 10.

³² *Clifton v. Viscount Bury and Others*, (1887–1888) 4 TLR 1.

³³ 4 TLR 1.

Justice Hawkins, ruling in favor of the plaintiff, noted that the statute in question did nothing to divest property owners of the rights they held in land or the air adjacent: “Nobody,” he concluded, “could suggest seriously that the line of fire over Newlands Farm formed a part of the common.”³⁴ The statute had explicitly *not* deprived landowners of any of their property rights in the fields adjacent to the commons, which meant that they continued to have a right to the airspace. Every bullet that crossed the land and fell, moreover, “materially interfered[d] with the plaintiff’s ordinary use and enjoyment of his farm,” constituting “a series of trespasses of an actionable character.”³⁵ Although no bullets had actually been proven to have crossed the land, and while no injury had been occasioned to the plaintiff, the use of the airspace had “rendered the occupation of that part of the farm less enjoyable than the plaintiff was entitled to have it.”³⁶

Using similar logic, the House of Lords in *Lemmon v. Webb* determined that a landowner was free to cut off his neighbor’s tree as it overhung his property, without first obtaining permission or giving notice of his intent to do so.³⁷ The court determined that allowing boughs and roots to extend onto adjacent property was a nuisance and that any person whose land was so affected had the right to abate it.

The law of torts thus consistently recognized the importance of *ad coelum*. Neither entry onto another’s land (trespass *quare clausum fregit*) nor taking someone’s goods (trespass *de bonis asportatis*) required the use of force, the breaking of an enclosure, the transgression of a visible boundary, or even unlawful intent.³⁸ Nor did actual damage have to occur. In his authoritative treatise first published in 1887, Sir Frederick Pollock recognized the ancient protections extended by common law to property rights. He quoted *Entick v. Carrington*, “Every invasion of private property, be it ever so minute, is a trespass.”³⁹ “There is no doubt,” Pollock wrote, “that if one walks across a stubble field without lawful authority or the occupier’s leave, one is technically a trespasser.”⁴⁰ Even “[l]oitering on a highway . . . for the purpose of annoying the owner of the soil in his lawful use of the adjacent land, or prying into his occupations there, may be a trespass against that owner.”⁴¹

Pollock spoke directly to *ad coelum*: “It has been doubted whether it is a trespass to pass over the land without touching the soil, as one may in a balloon, or to cause a material object, as shot fired from a gun,

³⁴ 4 TLR 1.

³⁵ 4 TLR 1, citing *Pickering v. Rudd*, 1, Stark, 58. See also *Kenyon v. Hart*, 6 B. and S. 249.

³⁶ 4 TLR 1.

³⁷ *Lemmon v. Webb*, [1895] AC 1, Bailii, [1894] UKHL 1. See also *Lemmon v. Webb*, [1894] 3 Ch 1.

³⁸ Frederick Pollock, *The Law of Torts*, 1st ed. (London: Stevens and Sons, 1887), *280, p. 218.

³⁹ *Entick v. Carrington*, (1765) 19 St Tr 1066, cited in Pollock, *Law of Torts*.

⁴⁰ Pollock, *Law of Torts*, 1st ed., p. 218.

⁴¹ Pollock, *Law of Torts*, 1st ed., p. 218 (footnotes omitted).

to pass over it.”⁴² Pollock, like the English courts before him, roundly rejected Lord Ellenborough’s ruminating in *dicta* in *Pickering*, stating, “Fifty years later Lord Blackburn inclined to think differently, and his opinion seems the better.”⁴³ Pollock noted that “wrongful entry on land below the surface, as by mining” was “prominent in our modern books.”⁴⁴ *Pari passu*, “[i]t does not seem possible by the principles of the common law to assign any reason why an entry *at any height* above the surface should not also be a trespass.”⁴⁵ While it may be improbable for someone crossing over at a great height to cause any actual damage to the land below, the question of damage was utterly “irrelevant”: if mere trespass was sufficient for the surface, so, too, for the air above. For Pollock, “it would be strange if we could object to shots being fired across our land only in the event of actual injury being caused.”⁴⁶

In later editions, Pollock specifically called out navigable aircraft:

Clearly it would be a trespass to sail over another man’s land in a balloon (much more in a controllable air-craft) at a level within the height of ordinary buildings, and it might be a nuisance to keep a balloon hovering over the land even at a greater height.⁴⁷

Pollock acknowledged that “the projectiles of modern artillery, when fired for extreme range, attain in the course of their trajectory an altitude exceeding that of Mont Blanc or even Elbruz.”⁴⁸ But while a projectile at such a height might not constitute a trespass, a different situation holds closer to earth.⁴⁹ There, undoubtedly, it is a trespass, and not a mere nuisance, that occurs.

Ad coelum applied regardless of whether land was held privately or for public use. In 1903, for instance, the question arose of whether a local highway authority could restrain the running of a power cable 34 feet above Regents Park Road in London.⁵⁰ The court noted that the council held the right to the property, which included, “All the stratum of air above the surface and all the stratum of soil below the surface which in any reasonable sense can be required for the purposes of the street, as street.”⁵¹

⁴² Pollock, *Law of Torts*, 1st ed., p. 219.

⁴³ Pollock, *Law of Torts*, 1st ed., p. 219.

⁴⁴ Pollock, *Law of Torts*, 1st ed., p. 219.

⁴⁵ Pollock, *Law of Torts*, 1st ed., p. 219 (emphasis added).

⁴⁶ Pollock, *Law of Torts*, 1st ed., p. 219.

⁴⁷ Pollock, *The Law of Torts*, 11th ed. (London: Stevens and Sons, 1920), p. 350.

⁴⁸ Pollock, *Law of Torts*, 11th ed., p. 350.

⁴⁹ Pollock, *Law of Torts*, 11th ed., p. 350–352.

⁵⁰ *Finchley Electric Light Co. v. Finchley Urban Dist.*, [1903] 1 Ch 437 (overruled [1902] 1 Ch 866).

⁵¹ 1 Ch 437.

<a head>The American Context</a head>

The American colonies, and later, states, adopted English common law. Professor James Kent's *Commentaries on American Law*, adapted from lectures that he presented at Columbia Law School starting in 1794, recognized its importance in early America:

The common law so far as it is applicable to our situation and government has been recognised and adopted as one entire system by the Constitutions of Massachusetts, New York, New Jersey and Maryland. It has been assumed by the courts of justice or declared by statute, with the like modifications, as the law of the land, in every state. It was imported by our colonial ancestors, as far as it was applicable, and was sanctioned by royal charters and colonial statutes. It is also the established doctrine that English statutes passed before the emigration of our ancestors, and applicable to our situation, and in amendment of the law constitute a part of the common law of this country.⁵²

It was not the entire body of law that transferred, but only those measures that applied to the colonists in their new conditions.⁵³ Upon independence, the new state legislatures and courts explicitly incorporated English common law through their state constitutions, as well as by statute.

In the Commonwealth of Massachusetts, the state constitution declared that all law previously in effect and practiced in a court of law would remain in force.⁵⁴ In Virginia, statutory provisions explicitly incorporated the common law.⁵⁵ Upon becoming a state in 1790, Vermont similarly specified, “So much of the common law of England as is applicable to the local situation and circumstances, and is not

⁵² James Kent, *Commentaries on American Law*, vol. 1, (St. Paul, Minnesota, West Publishing Co., 1894), p. 188. See also *State v. Campbell, T.U.P. Charlton (Ga.)* 166 (“When the American Colonies were first settled by our ancestors it was held, as well by the settlers, as by the judges and lawyers of England, that they brought hither as a birthright and inheritance so much of the common law as was applicable to their local situation, and change of circumstances.”); (1722) 2 Peere Wms 75 (“9th August 1722, it was said by the Master of the Rolls to have been determined by the Lords of the Privy Council upon an appeal to the King in council from the foreign plantations, 1st, that if there be a new and uninhabited country found out by English subjects, as the law is the birthright of every subject, so wherever they go they carry their laws with them, and, therefore, such new-found country is to be governed by the laws of England.”).

⁵³ Richard C. Dale, “The Adoption of the Common Law by the American Colonies,” *American Law Register* 30, no. 9 (1882): 553, 554.

⁵⁴ Massachusetts Constitution (1780), ch. VI, art. VI (“All the laws which have heretofore been adopted, used and approved in the Province, Colony or State of Massachusetts Bay, and usually practiced on in the Courts of law, shall still remain and be in full force, until altered or repealed by the Legislature; such parts only excepted as are repugnant to the rights and liberties contained in this Constitution.”).

⁵⁵ Code of Virginia 1860, ch. 16, § 1 (“The common law of England, so far as it is not repugnant to the principles of the Constitution of this state shall continue in force within the same.”).

repugnant to the constitution or laws of this state, shall be deemed and considered law in this state, and all courts are to take notice thereof and govern themselves accordingly.”⁵⁶

This practice continued well into the 19th century, as new states were admitted to the union. Although California did not gain statehood until 1850, it still passed a general law stating, “The common law of England, so far as it is not repugnant to or inconsistent with the Constitution of the United States, or the Constitution or laws of the state of California, shall be the rule of decision in all the courts of this state.”⁵⁷ Similar provisions marked the statute books of Illinois, Indiana, Missouri, Nebraska, Wisconsin, and other states.⁵⁸ Writing in *Lyman v. Bennet*, the Michigan Supreme Court explained:

Practically the common law has prevailed here in ordinary matters since our government took possession, and the country has grown up under it. . . . A custom which is as old as the American settlements, and has been universally recognized by every department of government, has made it the law of the land if not made so otherwise. Our statutes, without this substratum, would not only fail to provide for the great mass of affairs, but would lack the means of safe construction.⁵⁹

The court, as a result, was “of opinion that questions of property not clearly excepted from it must be determined by the common law.”⁶⁰

⁵⁶ See Vermont ch. 32, General Statutes of 1870. See also North Carolina Code 1855, ch.4, § 1. (“All such parts of the common law as were heretofore in force and use within this state, or so much of the common law as is not destructive of or repugnant to, or inconsistent with, the freedom and independence of this state and the form of government therein established, and which has not been otherwise provided for in the whole or in part, not abrogated, repealed or become obsolete, are hereby declared to be in full force within the state.”).

⁵⁷ California Act of April 13, 1850, Gen. Laws, p. 599.

⁵⁸ See Illinois Rev. Stat. 1874, ch. 28, § 1 (“That the common law of England, so far as the same is applicable and of a general nature, and all statutes or acts of the British Parliament made in aid of or to supply the defects of the common law prior to the fourth year of James I [with some exceptions] and which are of a general nature and not local to that kingdom, shall be the rule of decision, and shall be considered as of full force until repealed by legislative authority.”); Indiana Act of May 31, 1852 (same wording as the Illinois statute); Kansas Rev. Stat. 1868, ch. 119, § 3 (“The common law, as modified by constitutional and statutory law, judicial decisions and the condition and wants of the people shall remain in force in aid of the general statutes of the state.”); Missouri Rev. Stat. 1870, ch. 86, § 1 (“The common law of England and all statutes and Acts of Parliament made prior to the fourth year of the reign of James I, and which are of a general nature and not local to that kingdom, which common law and statutes are not repugnant to or inconsistent with the Constitution of the United States, the Constitution of this state, or the statute laws in force for the time being, shall be the rule of action and decision in this state, any law, custom or usage to the contrary notwithstanding.”); Nebraska Rev. Stat. 1873, § 1 (“So much of the common law of England as is applicable and not inconsistent with the Constitution of the United States, the constitution of this state or with any law passed or to be passed by the legislature thereof is adopted and declared to be the law within this state.”); Wisconsin Constitution, § 13 (“Such parts of the common law as are now in force in the territory of Wisconsin not inconsistent with this Constitution shall be and continue part of the law of this state until altered or suspended by the legislature.”).

⁵⁹ *Lyman v. Bennett*, 8 Mich. 18.

⁶⁰ 8 Mich. 18.

The concept of *ad coelum* was among the provisions of common law integrated into property law. Thus, in the 19th century, American state courts routinely ruled that overhanging branches constituted both a trespass and a nuisance.⁶¹ Eaves extending over adjacent property were considered a trespass.⁶² The same was true of cornices, windows, roofs, walls, or any part of any building: *any* incursion into the airspace of an adjacent landowner amounted to trespass on the property owner's land.⁶³ At other times, the courts considered the overhang to be a nuisance.⁶⁴ While there was some conflict over whether or not ejectment was a proper means of redress, trespass and nuisance both tended to result in an injunction as a means of redress.⁶⁵

In the 1897 case, *Metropolitan West Side Elevated R.R. Co. v. Springer*, the construction of a railway across an alley amounted to a taking of the property by a landowner.⁶⁶ Illinois Supreme Court Chief Justice Jesse J. Phillips wrote, "It is a maxim of the law, *Cujus est solum ejus est usque ad coelum*, and by taking one foot on which the pillars were placed, on the south side of the alley, the rights reserved in the deed were invaded . . . by the projecting super-structure."⁶⁷

The basic precept in dozens of state cases was that *ad coelum* granted landowners control above and below the property to which they held title. Thus, the decision to build a structure—or to remove it—lay within the property owner's domain.⁶⁸ The building was inseparable from the underlying land.⁶⁹

⁶¹ See, e.g., *Grandone v. Lovdal*, 70 Cal. 161 (1866); *Tanner v. Wallbrun*, 77 Mo. App. 262 (1898); *Countryman v. Lighthill*, 24 Hun. (N.Y.) 405 (1881).

⁶² See, e.g., *Aiken v. Benedict*, 39 Barb. (N.Y.) 409 (1863); *Smith v. Smith*, 110 Mass. 302 (1872); *Harrington v. McCarthy*, 169 Mass. 492 (1897); *Lawrence v. Hough*, 35 N.J.Eq. 371 (1882).

⁶³ See, e.g., *Reimer's Appeal*, 100 Pa. Sta. 182 (1882) (bay window); *Murphy v. Bolger*, 60 Vt. 723 (1888) (roof); *Wilmarth v. Woodcock*, 58 Mich. 482, 25 N.W. 475 (1885); *Lawrence v. Hough*, 35 N. J. Eq. 371 (1882) (cornices); *Langfeldt v. McGrath*, 33 Ill. App. 158 (1889); *Codman v. Evans*, 7 Allen (Mass.) 431 (1863) (wall); *Lyle v. Little*, 83 Hun. 532, 33 N.Y.S. 8 (1895) (wall); *Smith v. Smith*, 110 Mass. 302 (1872); *Esty v. Baker*, 48 Me. 495 (1860); *Huber v. Stark*, 124 Wis. 359, 102 N. W. 12 (recognizing both trespass and nuisance); *Corner v. Woodfill*, 126 Ind. 85, 25 N. E. 876 (1890). Cf. *Zander v. Valentine Blatz Brewing Co.*, 95 Wis. 162, 70 N. W. 164 (1879); *Rahn v. Milwaukee Electric Ry. & Light Co.*, 103 Wis. 467, 79 N. W. 747 (1899).

⁶⁴ See, e.g., *Meyer v. Metzler*, 51 Cal. 142 (1875); *Wilmarth v. Woodcock*, 58 Mich. 482, 25 N. W. 475 (1885); *Norwalk Heating & Lighting Co. v. Vernam*, 75 Conn. 662, 55 Atl. 168 (1903); *Barnes v. Berendes*, 139 Cal. 32, 69 Pac. 491 (1902); *Copper v. Dolvin*, 68 Ia. 757 (1886); *Langfeldt v. McGrath*, 33 Ill. App. 158 (1889); *Kafka v. Bozio*, 191 Cal. 746, 218 Pac. 753 (1923).

⁶⁵ Edward C. Sweeney, "Adjusting the Conflicting Interests of Landowner and Aviator in Anglo-American Law," *Journal of Air Law and Commerce* 3 (1932): 534–35, n.150 (comparing cases where an action of ejectment was permitted as against those where it was denied).

⁶⁶ *Metropolitan West Side Elevated R.R. Co. v. Springer*, 171 Ill. 170, 175, 49 N.E. 416 (1897).

⁶⁷ 171 Ill. 175.

⁶⁸ See *Atkins v. Bordan*, 2 Met. (43 Mass.) 457, 467 (1841) (noting that according to *Cujus est solum, ejus est usque ad coelum*, the owner of an estate may make any and all beneficial uses of it as their own pleasure and may alter the mode of using it by erecting or removing building over it or digging into or under it without restraint).

⁶⁹ See *Baldwin v. Breed*, 16 Conn. 60, 66 (1843) (applying *Cujus est solum, ejus est usque ad coelum*, by stating that separating a building from the ground on which it stands cannot be carried into effect without great difficulty); *Becket v. Clark*, 40 Conn. 485, 488 (1873) (stating that *Cujus est solum, ejus est usque ad coelum* makes it so that the house and land are understood to be divided based upon the same line); *Isham v. Morgan*, 9 Conn. 374, 377 (1832) (Consistent with *cujus est solum, ejus est usque ad coelum*, the delivery of the deed to Lydia conveyed not only the land but the buildings upon the land.); *Stevenson v. Bachrach*, 170 Ill. 253, 48 N. E. 327, 328 (1897) (holding that the building which rests upon the portion of the land owned by appellee

Landowners had a right to light in the air above it.⁷⁰ And they had a right to use of gravel, water, minerals, natural gas, petroleum, and other natural resources below it.⁷¹ The same rights carried with the grant of an easement.⁷²

Well into the 20th century, state courts continued to view such invasions of airspace as a trespass, a nuisance, or both.⁷³ It was not necessary for the item entering the airspace ever to touch the ground. Penetration of the column of air over the property was sufficient. Thus, a cornice, even when it didn't interfere with the plaintiff's use of the property, still interfered with the plaintiff's property rights, which extended upward indefinitely and which could be enforced against invasion to the same extent as surface rights.⁷⁴

Even when the invasion is temporary and does no actual damage, it still violates the property owner's rights. In *Herrin v. Sutherland*, the Montana Supreme Court determined that shooting at duck flying over

belongs in severalty to him, and the portion of the building which rests upon the land belonging to appellants belongs in severalty to them).

⁷⁰ See *Barnett v. Johnson*, 15 N. J. Eq. 481, 489 (1856-abbreviated) (Defendant proposed to build an arch and a building over the canal that would block the windows of the plaintiff who owned the adjacent property, thus restricting light and air to the property; the court ruled that the plaintiff had the right to light and air.). But see *Mahan v. Brown*, 13 Wend. (N.Y.) 261, 263 (1835) (right to light waived by building too close to the property line).

⁷¹ See *Gas Products Co. v. Rankin*, 63 Mont. 372, 389, 207 Pac. 993, 997, 24 A. L. R. 294 (1922-in quotation from Blackstone) (finding chapter 125 of the Laws of 1921, prohibiting "wasteful and extravagant" uses of natural gases, to be unconstitutional as petroleum and gas beneath the surface belong to the landowner); *Chase v. Silverstone*, 62 Me. 175, 183 (1873-abbreviated) (protecting a landowner's right to dig a well); *Hague v. Wheeler*, 157 Pa. St. 324, 27 At. 714 (1892-Eng. equiv.) (The mere fact that the defendants, by operations upon their land, are taking gas from the earth, and thereby diminishing the quantity of gas which would otherwise come to the plaintiffs' wells, furnishes no ground for complaint or equitable interference); *Lenfers v. Henke*, 73 Ill. 405, 408 (1874-Eng. equiv.) (property ownership conveying right to lead mines); *Lime Rock R. R. Co. v. Farnsworth*, 86 Me. 127, 29 At. 957, 958 (1893-Eng. equiv.) (property ownership conveying marble and lime rock within the tract); *Louisville & Nashville R. R. Co. v. Boykin*, 76 Ala. 560, 563 (1884-Eng. equiv.) (conveying right to gravel along with purchase of land); *Pence v. Carney*, 58 W. Va. 296, 52 S. E. 702, 6 L.R.A. (n. s.) 266 (1905) (right to percolating water). But see *Katz v. Walkinshaw*, 141 Cal. 116, 74 Pac. 766, 64 L. R. A. 236 (1902) (applying the doctrine of reasonable use as a limit on *ad coelum* for well water "to such amount of water as may be necessary for some useful purpose in connection with the land from which it is taken"); *Meeker v. East Orange*, 77 N. J. L. 623, 636, 74 At. 379, 384, 25 L. R. A. (n. s.) 465 (1909) (limiting sale of percolating water).

⁷² See *First Baptist Soc. v. Wetherell*, 34 R.I. 155, 82 Atl. 1061, 1063 (1912).

⁷³ See, e.g., *Huber v. Stark*, 124 Wis. 359 (1905) (eaves entering adjacent airspace held to be a trespass); *Crocker v. Manhattan Life Ins. Co.* 61 App. Div. (N.Y.), 226 (1901) (eaves extending over an adjacent owner's land held to be a trespass); *Ackerman v. Ellis*, 81 N.J.L. 1 (1911) (holding branches extending into a property owner's airspace to be a nuisance); *Puerto v. Chieppa*, 78 Conn. 401 (1905) (holding that a board attached to building extending to adjacent airspace constituted a trespass); *Norwalk Heating Lighting Co. v. Vernam*, 75 Conn. 662 (1903) (a wooden structure extending over an adjacent property amounted to a trespass); *Whittaker v. Standvick*, 100 Minn. 396 (1907) (shooting over a pass between two navigable lakes ruled both a trespass and a nuisance); *Crocker v. Manhattan Life Ins. Co.*, 61 App. Div. 226, 70 N.Y.S. 492 (1901) (cornice projecting into adjacent property considered a trespass); *Barnes v. Berendes*, 139 Cal. 32, 69 P. 491, 72 P. 406 (1902) (wall extending into neighbor's property considered a trespass); *Barnes v. Berendes*, 139 Cal. 32 (1903) (leaning walls considered a trespass); *Herrin v. Sutherland*, 241 P. 328 (Mont. 1925) (shooting of wild ducks above a navigable stream); *Portsmouth Co. v. United States*, 260 U.S. 327 (1922) (on appeal from the Court of Claims) (firing of guns over private property); *Milton v. Puffers*, 207 Mass. 416, 93 N. E. 634 (1911) (protruding foundation stones considered both a trespass and a nuisance).

⁷⁴ *Young v. Thiedick*, 28 Oh. Ct. Ap. 239 (1918).

someone's property constituted trespass.⁷⁵ Chief Justice Llewellyn Callaway observed, "[I]t seems to be the consensus of the holdings of the courts in this country that air space, at least near the ground, is almost as inviolable as the soil itself."⁷⁶ There did not have to be any threat occasioned by the invasion of airspace to be considered a trespass: merely extending an arm over a neighbor's land to retrieve a ladder was considered sufficient.⁷⁷ In almost all of these cases, the courts looked to *ad coelum* to guide their thinking.⁷⁸

The Supreme Court shared the states' approach, considering the firing of a gun across an individual's property to be a trespass. The routine discharge of a battery amounted to a taking.⁷⁹ In *Portsmouth Harbor Land & Hotel Company*, Justice Holmes, writing for the Court, noted, "If the United States, with the admitted intent to fire across the claimants' land at will, should fire a single shot or put a fire control upon the land, it well might be that the taking of a right would be complete. But even when the intent thus to make use of the claimants' property is not admitted, while a single act may not be enough, a continuance of them in sufficient number and for a sufficient time may prove it. Every successive trespass adds to the force of the evidence."⁸⁰

The decision was not unique to weapons. Any extended use of property owners' airspace by the government constituted takings. When telephone wires became standard for carrying communications, for instance, cases routinely recognized the importance of *ad coelum*. In the 1906 case of *Butler v. Frontier Telephone Company*, the New York Supreme Court explained:

What is "real property"? What does the term include so far as the action of ejectment is concerned? The answer to these questions is found in the ancient principle of law: "*cujus est solum, ejus est usque ad coelum et ad inferos*." The surface of the ground is a guide, but not the full measure. "*Usque ad coelum*" is the upper boundary, and while this may not be taken too literally, there is no limitation within the bounds of any structure yet erected by man. So far as the case before us is concerned, the plaintiff as the owner of the soil owned upward to an indefinite extent. ... According to fundamental principles and within the limitations mentioned, space above

⁷⁵ *Herrin v. Sutherland*, 74 Mont. 587, 241 Pac. 328 (1925) (confirming that airspace over one's property is subject to protection against trespass).

⁷⁶ 204 Pac. 328.

⁷⁷ *Hannaballson v. Session*, 116 Iowa, 457 (1902).

⁷⁸ See, e.g., *Winton v. Cornish*, 5 Ohio 478 (1931); *Frazier v. Brown*, 12 Ohio Stat. 294, 304 (1891); *Winslow v. Fuhrman*, 25 Ohio Stat. 639, 651 (1904).

⁷⁹ *Portsmouth Harbor Land & Hotel Co. v. United States*, 260 U.S. 327 (1922).

⁸⁰ 260 U.S. 329–30. For two prior cases finding insufficient sustained engagement to constitute a taking, see *Peabody v. United States*, 231 U.S. 530 (1913), and *Portsmouth Harbor Land & Hotel Co. v. United States*, 250 U.S. 1 (1919).

land is real estate the same as the land itself. The law regards the empty space as if it were a solid, inseparable from the soil, and protects it from hostile occupation accordingly.⁸¹

The court went on to underscore the point: “Unless the principle of “*usque ad coelum*” is abandoned, any physical, exclusive, and permanent occupation of space above land is an occupation of the land itself and a disseisin of the owner to the extent.”⁸² Land ownership extended downward as well. Thus, in 1878, the Pennsylvania Coal Company conveyed the surface of a plot of land but explicitly retained the right to mine underneath it.⁸³

Efforts by the government to overregulate mineral extraction similarly reflected *ad coelum*, triggering protections against takings. In 1921, the Commonwealth of Pennsylvania enacted a statute preventing coal mining that could possibly affect the integrity of any surface land. The Supreme Court determined that while a state may pass laws in the valid exercise of its police powers that have an incidental impact on property values, when they causes sufficient diminution in property value, the state must take the land by eminent domain and provide compensation.⁸⁴ So, too, was the construction of an underground sewer considered a taking—merely on the grounds that the property owners were deprived of *potentially* using the space occupied by the pipes.⁸⁵

A similar approach to *ad coelum* held in regard to land held by public authorities. As explained in Professor Eugene McQuillin’s *The Law of Municipal Corporations*,

The public right to the use of streets goes to the full width of the street, and extends, indefinitely upward and downward. On the ground, therefore, of failure to exercise ordinary care to keep public ways in a reasonably safe condition for travel, municipal negligence may be established, on the theory of a defect in the street, in action for damages due to injuries to travelers from awnings, signs, billboards, poles, electric wires, or other objects suspended over, or near thereto, or falling into a street or sidewalk.⁸⁶

⁸¹ *Butler v. Frontier Telephone Co.*, 186 N.Y. 486, 491 (1906) (Vann, J.).

⁸² 186 N.Y. 492.

⁸³ *Penn. Coal Co. v. Mahon*, 260 U.S. 393, 419 (1878).

⁸⁴ 260 U.S. 393, 419.

⁸⁵ See *Smith v. City of Atlanta*, 92 Ga. 119, 17 S. E. 981 (1893).

⁸⁶ Eugene McQuillin, *A Treatise on the Law of Municipal Corporations*, vol. 8 (Chicago: Callaghan and Co., 1921), § 2775 (internal quotations omitted). See also McQuillin, *Municipal Corporations*, vol. 6 (1913), § 2775; *Incorporated Town v. Cent. States El. Co.*, 204 Iowa 1246, 1250, 214 N.W. 879, 54 A.L.R. 474 (1927) (quoting McQuillin).

Courts considered any invasion of the airspace above a public right of way to constitute a nuisance.⁸⁷ Even a bay window on a second story, 16 feet above the ground, which extended approximately three feet into the line of the street was held a public nuisance.⁸⁸ So, too, a wire temporarily erected as part of a Fourth of July celebration was considered an obstruction of the street below.⁸⁹ Awnings, bridges, trees, bay windows—anything projecting into the space above public land, without the explicit approval of the municipality, constituted a *de facto* nuisance.⁹⁰

Public right of way similarly extended downward, into the earth.⁹¹ While certainly a duty to keep the streets safe was operable (thus implicating nuisance), state courts routinely looked to the city or town *qua* property owner also to consider such invasions of airspace a trespass. The Supreme Court of Iowa, for example, noted in relation to a wire mounted by an electric company above the road:

The city being the owner in fee simple of the streets, of necessity its rights extend above the surface thereof. How far, we need not determine in this case; but, since it is entitled to the absolute control and occupancy of the space above these streets, any invasion thereof by stretching wires thereon at this height of necessity is an infraction of the rights of the city, and amounts to a trespass.⁹²

<a head>State Control of Property Rights</a head>

The Articles of Confederation acknowledged that each state retained “its sovereignty, freedom, and independence, and every Power, Jurisdiction and right, which is not by this confederation expressly delegated to the United States, in Congress assembled.”⁹³ Over the next decade, the lack of a sufficiently

⁸⁷ Byron Elliott and William Elliott, *A Treatise on the Law of Roads and Streets*, vol. 2, 3rd ed. (Indianapolis, IN: Bobbs-Merrill Co., 1911), p. 256, § 830.

⁸⁸ Elliott and Elliott, *Law of Roads and Streets*, p. 257.

⁸⁹ *Wheeler v. City of Ft. Dodge*, 131 Iowa 566 (1906) (“The fact that the wire in most of its course passed through the air above the heads of the people using the walks and carriageway below does not remove its character as an obstruction of the street. The public right goes to the full width of the street, and extends indefinitely upward and downward, so far at least as to prohibit encroachment upon said limits by any person by any means by which the enjoyment of said public right is or may be in any manner hindered or obstructed or made inconvenient or dangerous.”)

⁹⁰ See, e.g., *Bohen v. Waseca*, 32 Minn. 176 (19 N.W. 730, 50 Am. Rep. 564) (1884) (awning); *Hume v. Mayor*, 74 N.Y. 264 (1878), and *Drake v. Lowell*, 13 Met. (Mass.) 292 (1847) (awning); *Bybee v. State*, 94 Ind. 443 (48 Am. Rep. 175) (1905) (bridge or covered viaduct); *Jones v. City of New Haven*, 34 Conn. 1 (1867) (tree); *Reimer’s Appeal*, 100 Pa. 182 (45 Am. Rep. 373) (1882) (bay window).

⁹¹ See, e.g., *Beall v. Seattle*, 28 Wash. 593 (69 P. 12, 61 L.R.A. 583, 92 Am. St. Rep. 892) (1902) (boiler underground). See also *Abilene v. Cowperthwait*, 52 Kan. 324 (34 P. 795) (1903); *Smith v. Leavenworth*, 15 Kan. 81 (1875); *Woodbury v. Dist. of Col.*, 5 Mackey (D.C.) 127 (1886).

⁹² *Incorporated Town v. Cent. States El. Co.*, 214 N.W. 879 (Iowa 1927).

⁹³ Articles of Confederation, art. II.

robust national government forced a renegotiation of the terms of the union. Yet even as delegates drafted the Constitution, they preserved state sovereignty to ensure a check on federal power.

For some, the document did not go far enough—a concern that the Federalist Papers addressed. In them, James Madison argued that states retained their powers. Each branch of the national government would “owe its existence more or less to the favor of the State governments, and must consequently feel a dependence, which is much more likely to beget a disposition too obsequious than too overbearing towards them.”⁹⁴ Alexander Hamilton scoffed at the idea that states would become subservient to federal regulation, calling such speculation “idle and visionary.”⁹⁵ The Constitution would guard against federal overreach by limiting the national government to the enumerated authorities, in sharp contrast to the status of states as governments of general jurisdiction. Madison explained:

The powers delegated by the proposed Constitution to the federal government are few and defined. Those which are to remain in the State governments are numerous and indefinite. The former will be exercised principally on external objects, as war, peace, negotiation, and foreign commerce. . . . The powers reserved to the several States will extend to all the objects which, in the ordinary course of affairs, concern the lives, liberties, and properties of the people, and the internal order, improvement, and prosperity of the State.⁹⁶

Congress could not act outside of the powers specified in Article I, § 8. Even within the enumerated powers, the capital could not be established without the states affirmatively agreeing to cede territory.⁹⁷ The Constitution forbade federal acquisition of state territory, or the partitioning of existing states, without their legislature’s consent.⁹⁸ The Constitution established—and explicitly recognized—dual sovereignty. States, consistent with the Guarantee Clause, constituted republics in their own right.⁹⁹ Their citizens were to enjoy the privileges and immunities of their sister states.¹⁰⁰

⁹⁴ Federalist No. 45 (James Madison), 1788, reprinted in Alexander Hamilton, James Madison, John Jay, Clinton Rossiter, *The Federalist Papers*, (New York, Penguin, 1961), p. 291.

⁹⁵ Federalist No. 16 (Alexander Hamilton), 1787, , reprinted in Alexander Hamilton, James Madison, John Jay, Clinton Rossiter, *The Federalist Papers*, (New York, Penguin, 1961), p. 115.

⁹⁶ Federalist No. 45 (Madison), pp. 292–93.

⁹⁷ U.S. Const. art. I, § 8, cl. 17. See also Federalist No. 43 (James Madison), 1788, reprinted in Alexander Hamilton, James Madison, John Jay, Clinton Rossiter, *The Federalist Papers*, (New York, Penguin, 1961), pp. 272–73 ([The federal district is] to be appropriated to this use with the consent of the State ceding it; as the State will no doubt provide in the compact for the rights and the consent of the citizens inhabiting it; . . . as they will have had their voice in the election of the government which is to exercise authority over them; . . . as the authority of the legislature of the State, and of the inhabitants of the ceded part of it, to concur in the cession will be derived from the whole people of the State in their adoption of the Constitution, every imaginable objection seems to be obviated.”).

⁹⁸ U.S. Const. art. IV, § 3.

⁹⁹ U.S. Const. art. IV, § 4.

¹⁰⁰ U.S. Const. art. IV, § 2.

States retained all powers neither delegated to the federal government nor prohibited to them.¹⁰¹ The powers to which the Tenth Amendment referred were extensive. Police powers (relating to health, welfare, and morals), criminal law, and corporate charters fell within the state domain. States had authority over education, manufacturing, and agriculture. They were responsible for regulating, controlling, and governing real and personal property, as well as individuals within state borders. As the Supreme Court explained in 1905:

Although this court has refrained from any attempt to define the limits of [state police powers], yet it has distinctly recognized the authority of a state to enact quarantine laws and health laws of every description; indeed, all laws that relate to matters completely within its territory and which do not by their necessary operation affect the people of other states.¹⁰²

A dozen years later, the Court again acknowledged that while it had not tried to define police powers, “its disposition is to favor the validity of laws relating to matters completely within the territory of the state enacting them.”¹⁰³

What this meant was that, as a practical matter, control of real property and associated questions fell to state and local governments. State sovereignty was so strong that federal power only extended to property exclusively in federal control. Thus, one of the first efforts by Congress to outlaw murder or robbery in any river, basin, or bay, fell outside constitutional bounds. As the U.S. Supreme Court explained in 1818, the effort by the government to prosecute a murder in Boston harbor on board the ship *Independence* under federal law ran afoul of the powers retained by the states.¹⁰⁴

State cases followed course. In *Commonwealth v. Young*, also decided in 1818, the Pennsylvania Supreme Court explained, “The legislative power and exclusive jurisdiction remained in the several states, of all territory within their limits, not ceded to, or purchased by, congress, with the assent of the state legislature, to prevent the collision of legislation and authority between the United States and the several states.”¹⁰⁵ Any real property not owned by the federal government was under state jurisdiction.

¹⁰¹ U.S. Const. amend. X.

¹⁰² *Jacobson v. Massachusetts*, 197 U.S. 11, 25 (1905) (internal quotations omitted).

¹⁰³ *Thomas Cusack Co. v. City of Chicago*, 242 U.S. 526, 531 (1917).

¹⁰⁴ *United States v. Bevens*, 16 U.S. 336, 389 (1818).

¹⁰⁵ *Commonwealth v. Young*, Brightly N.P., 302, 309 (Pa. 1818).

The position of a state was the same as that of a sovereign nation, which owed a duty to its citizens to act in the manner that best advanced their interests. In 1837, the U.S. Supreme Court acknowledged,

[A] State has the same undeniable and unlimited jurisdiction over all persons and things, within its territorial limits, as any foreign nation; where that jurisdiction is not surrendered or restrained by the Constitution of the United States. . . . [B]y virtue of this, it is not only the right, but the bounden and solemn duty of a State, to advance the safety, happiness and prosperity of its people, and to provide for its general welfare. . . . [A]ll those powers which relate to merely municipal legislation, or what may, perhaps, more properly be called *internal police*, are not thus surrendered or restrained; and that, consequently, in relation to these, the authority of a State is complete, unqualified and exclusive.¹⁰⁶

When Alabama joined the union in 1819, the federal government premised its admission on the condition that its navigable waters would remain public highways.¹⁰⁷ The Supreme Court circumscribed the requirement, noting that it did *not* deprive the state of its rights over navigable waters; nor did it affect state control over the shores or the soil under the navigable waterways. “[T]he United States never held any municipal sovereignty, jurisdiction, or right of soil in and to the territory, of which Alabama or any of the new States were formed,” the Court observed.¹⁰⁸ The state therefore was “entitled to the sovereignty and jurisdiction over all the territory within her limits, subject to the common law.”¹⁰⁹ The national government could not demand that the state cede its authority. Such a power would run rampant over the very concept of federalism.

The national government’s authority undergirding the Alabama provision was rooted in Congress’s Commerce Clause powers, which were initially narrowly interpreted.¹¹⁰ In *Gibbons v. Ogden*, the Court made it clear that while the navigation of waterways impacted interstate commerce, interior state traffic lay outside its remit:

The genius and character of the whole government seem to be, that its action is to be applied to all the external concerns of the nation, and to those internal concerns which affect the States generally; but not to those which are completely within a particular State, which do not affect

¹⁰⁶ *New York v. Miln*, 36 U.S. 102, 139 (1837).

¹⁰⁷ Act for the Admission of Alabama, Mar. 2, 1819, 15th Cong., Sess. II, ch. 47, pp. 489-492, §6, 3.

¹⁰⁸ *Pollard v. Hagan*, 44 U.S. 212, 221 (1845).

¹⁰⁹ 44 U.S. 222.

¹¹⁰ U.S. Const. art. I, § 8, cl. 3.

other States, and with which it is not necessary to interfere, for the purpose of executing some of the general powers of the government. The completely internal commerce of a State, then may be considered as reserved for the State itself.¹¹¹

Expressio unius exclusio alterius, by demarcating among the states, what lay within them was beyond Congress’s purview.¹¹² Inspection laws, too, lay outside federal control, as they fell within “that immense mass of legislation which embraces everything within the territory of a State, not surrendered to the general government: all which can be most advantageously exercised by the States themselves.”¹¹³ Chief Justice John Marshall explained:

Inspection laws, quarantine laws, health laws of every description, as well as laws for regulating the internal commerce of a State, and those which respect turnpike roads, ferries, &c., are component parts of this mass. No direct general power over these objects is granted to Congress; and, consequently, they remain subject to State legislation.¹¹⁴

While the federal government might control navigable waterways insofar as interstate commerce went, it operated within the strict limits long recognized as part of common law. For centuries riparian water rights lay with those landowners whose property abutted navigable waterways. Common law recognized their right to access water for transportation, building, and hunting or fishing. Congress has acknowledged states’ title to submerged navigable lands.¹¹⁵

At the Founding, the authority for regulating property rights transferred to the states. Landowners’ title to the water extended to the low-water mark, while the ground beneath was held *by the state*, not the federal government. This principle is well recognized by the courts.¹¹⁶ States own the beds under navigable waters, while adjacent landowners, absent other legal arrangements, own the water above. States—not the federal government—control and place any applicable restrictions on the landowners in their use and enjoyment of the property. Thus, an ordinance limiting the height of buildings in Baltimore and requiring that property owners obtain a permit before building, altering, or repairing any structure

¹¹¹ *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1, 195 (1824).

¹¹² 22 U.S. at 195.

¹¹³ 22 U.S. at 203.

¹¹⁴ 22 U.S. at 203.

¹¹⁵ Submerged Lands Act of 1953, Pub. L. 31, May 22, 1953, codified at 43 U.S.C. §§ 1301–1315.

¹¹⁶ See, e.g., *United States v. Pa. Salt Mfg. Co.*, 16 F.2d 476, 479 (E.D. Pa. 1926) (1926); Appeal of York Haven Water & Power Co., 212 Pa. 622, 62 A.97, 97 (1905); *Wainwright v. McCullough*, 66 (1869); *Commonwealth ex rel. Hensel v. Young Men’s Christian Ass’n of Warren*, 169 Pa. St. 24, 121 (1895).

within city limits, fell within state police powers.¹¹⁷ In New Hampshire, a statute forbidding the erection of fences higher than five feet when the purpose was to annoy adjoining owners or occupants similarly fell within the general powers of the state.¹¹⁸

Real estate law is governed by the general principles of contract law and individual state law. Deeds are executed and delivered to state entities. Building regulations, placement of billboards and advertising, zoning, and other matters impacting real property are handled by states and, in many cases, local municipalities. The Supreme Court has regularly upheld state and local authority in these areas.¹¹⁹ Courts only subject municipal zoning ordinances to rational basis review.¹²⁰ They give deference to the states for the rules regulating things that extend upward into the air, such as billboards.¹²¹ In considering the constitutionality of one such ordinance, the Court noted that while it had thus far refrained, “from any attempt to define with precision the limits of the police power . . . its disposition is to favor the validity of laws relating to matters completely within the territory of the state enacting them.”¹²²

Outside of property actually held by the federal government, it is the states who control property rights from the ground up—not the federal government. And states, as well as landowners, are limited by *ad coelum* in what they can do in regard to real property.

<a head>Aviation Law</a head>

By the time Pollock’s 11th edition of the *Law of Torts* was published in 1920, aircraft were becoming ever more widespread. According to the *New York Times*, 2,200 airplanes were in commercial use at that time and around 500 more were owned privately, with 92 companies operating planes and nearly twice as many manufacturing aircraft.¹²³ Numerous calls were being made, on behalf of industry, to adopt federal laws to support the nascent industry.¹²⁴ The American Bar Association and the National Conference of

¹¹⁷ See *Cochran v. Preston*, 108 Md. 220, 70 Atd. 113 (1908-Eng. equiv.).

¹¹⁸ See *Horan v. Byrnes*, 72 N.H. 93, 54 Atl. 945, 62 L.R.A. 602 (1903).

¹¹⁹ See, e.g., *Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 395 (1926) (recognizing that zoning ordinances can only be declared unconstitutional where they are “clearly arbitrary and unreasonable, having no substantial relation to the public health, safety, morals, or general welfare”).

¹²⁰ See, e.g., *Greene v. Town of Blooming Grove*, 879 F.2d 1061, 1063 (1989), citing *City of Cleburne v. Cleburne Living Center*, 473 U.S. 432, 440 (1985).

¹²¹ See *Thomas Cusack Co. v. Chicago*, 242 U.S. 526 (1917).

¹²² 242 U.S. at 530–31.

¹²³ Earl N. Findley, “Twenty Months of Commercial Aeronautics”, *New York Times*, January 16, 1921.

¹²⁴ Bogert, *Problems in Aviation Law*, pp. 271–72.

Commissioners on Uniform State Laws put committees together that year to determine what laws should govern airspace.¹²⁵

Early commentaries on how the law should evolve all questioned whether the federal government had the constitutional authority to pass any measures regulating aviation. The ancient recognition of *ad coelum* appeared to foreclose federal jurisdiction.¹²⁶ As a judicial matter, consistent with *ad coelum*, cases dealing with air travel had come down clearly on the side of the property owner. Thus, in 1822, when an aeronaut landed a balloon and damaged property, the aeronaut was held liable.¹²⁷ In 1912, an aviator flying 100 feet off the ground who did not cause any damage to property was likewise liable for trespass.¹²⁸ Common law applied. The theory underlying these and other cases was that title carried with it the right to occupy, use, and possess the airspace above the ground.

To address the constitutional concerns that dogged federal initiatives, it was initially proposed that the admiralty clause conferred the necessary authority.¹²⁹ Courts, however, rejected this reasoning, as air flight was more akin to the land than the sea.¹³⁰ Others invoked the war power clause, which was roundly rejected on the grounds that adopting this approach would create limitless federal power.¹³¹ Nor could the constitutional authority to make treaties provide the grounds for federal measures. The United States had not actually ratified the International Air Navigation Convention of 1919 (see discussion below), and it was questionable whether an agreement dealing exclusively with international travel had any bearing on interstate matters.¹³² In the interim, the powers conveyed by the commerce clause, as discussed above, were narrowly defined.

¹²⁵ Bogert, *Problems in Aviation Law*, pp. 273–73.

¹²⁶ See, e.g., William R. McCracken, “Air Law”, *American Law Review* 57 (1923): 99; Edmund F. Trabue, “The Law of Aviation”, *American Law Review* 58 (1924): 65; “Current Legislation: The Air Commerce Act of 1926,” *Columbia Law Review* 27, no. 8 (1927): 989.

¹²⁷ *Guille v. Swan*, 19 Johns. 381 (N.Y.) (1822).

¹²⁸ *Bank of Monongahela Valley v. Weston*, 159 N.Y. 201, 54 N.E. 40, 45 L.R.A. 547 (1912), in 19 Case and Comment 681 (1913), 42 A.L.R. 951.

¹²⁹ U.S. Const., art. III, § 2(1). For accounts of different constitutional theories for federal regulation of air travel, see Henry Hotchkiss, *A Treatise on Aviation Law* (New York: Baker, Voorhis and Co., 1928), §§ 54–57; Carl Zollman, *Law of the Air* (Milwaukee, WI: Bruce Publishing Co., 1927), § 54 et seq.

¹³⁰ See, e.g., *The Crawford Bros. No. 2*, 215 Fed. 269 (W.D. Wash. 1914) (jurisdiction declined for repairs against an airplane which had fallen into navigable waters under federal maritime jurisdiction); *The Steamer St. Lawrence*, 1 U.S. 522, 527 (1861) (“[N]o State law can enlarge [admiralty jurisdiction] nor can an act of Congress or rule of court make it broader than the judicial power may determine to be its true limits.”).

¹³¹ Zollman, *Law of the Air*, 39 ff; “Air Commerce Act,” *Columbia Law Review*: 989, n.4.

¹³² Zollman, *Law of the Air*, 39 ff; “Air Commerce Act,” *Columbia Law Review*: 989, n.4.

The constitutional concerns prompted the American Bar Association committee that had been formed to look into the matter to call for a formal amendment to bring air travel within federal control.¹³³ This perspective was shared by the Federal Air Service, whose legal adviser proposed either a constitutional amendment or the purchase of air avenues (on account of such travel amounting to a taking) to make it legal.¹³⁴

<b head>Uniform Aeronautics Act</b head>

Absent a constitutional amendment, as air travel proliferated and safety concerns mounted, the National Conference of Commissioners on Uniform State Laws prepared and, with the American Bar Association's approval, recommended that states adopt the Uniform Aeronautics Act.¹³⁵ The model statute focused on state sovereignty over airspace, landowners' rights over the air above their property, the lawfulness of flight, damage and collision, jurisdiction, and the use of aircraft. In so doing, the model statute clearly established state dominion.¹³⁶ The act provided that the ownership of the air above the land and waters of a state is vested in the several owners of the surface beneath, subject to certain overflight rights.¹³⁷ It recognized state contract, tort, and criminal jurisdiction over pilots, passengers, and aircraft when in flight over the state.¹³⁸ The model statute imposed absolute liability on the owner of every aircraft for injuries to persons or property on land or the water beneath, caused by an aircraft or any object falling from it.¹³⁹ Except for contributory negligence of the property owner or the person harmed, liability lay with the owner of the aircraft regardless of whether the owner was negligent.¹⁴⁰

¹³³ American Bar Association, Report of the Forty-Fourth Annual Meeting of the American Bar Association held at Cincinnati, Ohio, Aug. 31, Sept. 1 and 2, 1921 (Cincinnati, Ohio, Lord Baltimore Press, 1921): 81 ("the best ultimate solution of this question is one that will put the United States on a par with other nations, and that is a constitutional amendment, which will extend the power of Congress to legislate on flight through the air.").

¹³⁴ Rowan A. Greer, "International Aerial Regulations," Air Service Information Circular (Washington: Chief of the Air Service, 1926), p. 29.

¹³⁵ William A. Schnader, "Uniform Aviation Liability Act," *Journal of Air Law and Commerce* 9 (1938): 664. For discussion of the evolution of the model statute, see George Gleason Bogert, "Recent Developments in the Law of Aeronautics," *Cornell Law Quarterly* 8 (1923): 26. See also Herzel H. E. Plaine, "State Aviation Legislation," *Journal of Air Law and Commerce* 14 (1947): 333, 334 (referring to the Uniform Aeronautics Act of 1922 as "[p]erhaps the most influential of the uniform acts.").

¹³⁶ Uniform State Law for Aeronautics, National Conference of Commissioners on Uniform State Laws, conference, San Francisco, August 1922, 11 Uniform Laws Anno. 159, § 3 ("The ownership of the space above the lands and waters of this state is declared to be vested in the several owners of the surface beneath, subject to the right of flight described in Sec. 4."). Hereinafter "Uniform Aeronautics Act of 1922".

¹³⁷ Uniform Aeronautics Act of 1922, § 3. See also § 4 ("Flight in aircraft over the lands and waters of this state is lawful, unless at such low altitudes as to interfere with the then existing use to which the land or water, or the space over the land or water, is put by the owner, or unless so conducted as to be imminently dangerous to persons or property lawfully on land or water beneath.").

¹³⁸ Uniform Aeronautics Act of 1922, 11 Uniform Laws Anno. 159.

¹³⁹ Uniform Aeronautics Act of 1922, §§ 4, 5.

¹⁴⁰ Uniform Aeronautics Act of 1922, § 5.

Twenty-two states adopted the Uniform Aeronautics Act in some form.¹⁴¹ In Massachusetts, for instance, General Law 534 of 1922 established a licensing and registration system for flight.¹⁴² The law established control over private and commercial aircraft takeoff, landing, and flight.¹⁴³ State law also provided that aircraft should not be operated “over any thickly settled or business district at an altitude of less than 3,000 feet, or over any building or person at an altitude of less than 500 feet, except when necessary for the purpose of embarking or landing.” This law was tested in the 1930 case of *Smith v. New England Aircraft Co.*¹⁴⁴ The Supreme Court of Massachusetts, in an opinion issued by Chief Justice Arthur Rugg, considered the question of whether overflight constituted a trespass to be well within the state domain:

It is essential to the safety of sovereign States that they possess jurisdiction to control the airspace above their territories. It seems to us to rest on the obvious practical necessity of self-protection. Every government completely sovereign in character must possess power to prevent from entering its confines those whom it determines to be undesirable. That power extends to the exclusion from the air of all hostile persons or demonstrations, and to the regulation of passage through the air of all persons in the interests of the public welfare and the safety of those on the face of the earth. This jurisdiction was vested in this Commonwealth when it became a sovereign State on its separation from Great Britain.¹⁴⁵

At the Founding, common law conveyed control over the air to the states as an aspect of their sovereignty. Subsequent statutes regulating the operation of aircraft were “enacted under the police power.”¹⁴⁶ That authority can be used to regulate private rights. The court explained, “There are numerous statutes upheld as an exercise of the police power interfering with, narrowing and regulating, private rights of landowners in the use of their estates.”¹⁴⁷ Fishery rights, building regulations, the setback for homes, the installation of sprinklers, prohibitions on building heights, and zoning districts, *inter alia*, fall into this category.

State law, “by plain implication, if not by express terms,” recognized and authorized “the flying of aircraft over privately owned land.” Air travel had become an important part of life. Nevertheless, even

¹⁴¹ Schnader, “Uniform Aviation Liability Act.”

¹⁴² Mass. Gen. Laws ch. 534 (1922) (“An Act Regulating the Operation of Aircraft”).

¹⁴³ Mass. Gen. Laws ch. 534.

¹⁴⁴ *Smith v. New England Aircraft Co.* [Mass.] 170 N.E. 385 (1930). For a scathing critique of the court’s opinion in this case, see George B. Logan, “The Case of *Smith v. New England Aircraft Company*,” *Journal of Land and Public Utility Economics* 6 (1930): 316–24.

¹⁴⁵ 170 N.E. 385.

¹⁴⁶ 170 N.E. 385.

¹⁴⁷ 170 N.E. 385.

“after making every reasonable legal concession to air navigation as commonly understood and as established under the statutes,” the facts of the case, “under settled principles of law” (i.e., *ad coelum*) constituted “trespass to the land of the plaintiffs so far as concerns the take-offs and landings at low altitudes and flights.”¹⁴⁸ For the court, “ownership of airspace extends to reasonable heights above land.” Thus, “Air navigation, important as it is, cannot rightly levy toll upon the legal rights of others for its successful prosecution.”¹⁴⁹ At higher levels, unoccupied air space could be used, but under a certain level, the ancient rights of property owners prevailed, making any interference in the airspace a trespass.

In *Smith v. New England Aircraft Co.*, a 92-acre airport abutted the plaintiff’s land, which was a mostly wooded country estate of some 270 acres. Flights taking off from the airport traversed the property less than 100 feet off the ground, but not less than 500 feet over any buildings. Pilots leaving the airport followed the statutory provisions laid out by the state. For Chief Justice Rugg, the noise did not appear to materially interfere with the plaintiff’s physical comfort; nor did the flights subject any member of the household to fear. There had been no damage of any sort. “I find,” the chief justice wrote, “the plaintiffs are persons accustomed to a rather luxurious habit of living, and while the noise from the airplanes in flight over their premises has caused them irritation and annoyance . . . gauged by the standards of ordinary people this noise is no of sufficient frequency, duration or intensity to constitute a nuisance.”¹⁵⁰

<b head>The Air Commerce Act of 1926</b head>

In 1922, the first bill proposed in Congress to govern civil air navigation failed to pass.¹⁵¹ Four years later, the 1926 Air Commerce Act became law.¹⁵² Its purpose was to encourage and to support interstate and international commerce by supporting the nascent air industry.¹⁵³ Accordingly, it directed the secretary of commerce to ensure that new restrictions or regulations did not unduly hamper innovation.¹⁵⁴ The law charged the secretary with figuring out how to capitalize on aeronautics, to issue and enforce rules to make flight possible, to provide a licensing regime for airmen, to certify aircraft, and to establish

¹⁴⁸ 170 N.E. 385.

¹⁴⁹ 170 N.E. 385.

¹⁵⁰ 170 N.E. 385.

¹⁵¹ Civil Aviation, H.R. Rep. No. 69-572, at 7 (1926).

¹⁵² Air Commerce Act, Pub. L. No. 69-254, 44 Stat. 568 (1926). For discussion of the law prior to enactment of the statute, see Frederick P. Lee, “Air Commerce Act of 1926,” *American Bar Association Journal* 12 (1926): 371; Roger F. William, “Federal Legislation Concerning Civil Aeronautics,” *University of Pennsylvania Law Review* 76 (1928): 798.

¹⁵³ H.R. Rep. No. 69-572, at 7.

¹⁵⁴ H.R. Rep. No. 69-572, at 8.

airways.¹⁵⁵ The statute made bureaucratic changes to support its edict, establishing a new aeronautics branch at the Commerce Department, headed by an assistant secretary.¹⁵⁶

The Air Commerce Act of 1926 acknowledged dual sovereignty and the rights of state governments. It was careful to distinguish between interstate and international travel, which fell within Congress's Commerce Clause authorities, and intrastate activities, which fell outside congressional reach. It thus authorized the secretary of commerce to establish the requisite navigation facilities and airways, but not airports, which firmly fall within state and local control.¹⁵⁷ Only aircraft in navigable airspace, and therefore in interstate lanes, would be subject to regulation. The statute defined navigable airspace as "airspace above the minimum safe altitudes of flight prescribed by the Secretary of Commerce," which would be "subject to a public right of freedom of interstate and foreign air navigation."¹⁵⁸ This distinction preserved for the states (and via them, landowners) control over the ground and the air above it.

The House report accompanying the bill drew parallels with marine navigation.¹⁵⁹ It noted that Congress had drawn directly from the registration and inspection laws introduced in 1789 and 1838 for vessel registration and inspection.¹⁶⁰ The aids to navigation supplied by the federal government, moreover, would align with the documents issued by the Department of Commerce's Bureau of Lighthouses and U.S. Coast and Geodetic Survey, providing for fluidity in interstate and international navigation.¹⁶¹ In sum, "The whole framework and, in many cases, the very language of the bill may fairly be said to be merely the application to air transportation of provisions of statutes and principles of law long established as to water transportation."¹⁶² As with navigable waterways, the Commerce Clause

¹⁵⁵ 44 Stat. 568, 569–70.

¹⁵⁶ 44 Stat. 572–573, § 7.

¹⁵⁷ 44 Stat. 571, § 5(b).

¹⁵⁸ 44 Stat. 574 § 10. See also 44 Stat. 570, § 3(e), codified at 49 U.S.C.A. § 173(e) ("Regulatory Powers. The Secretary of Commerce shall by regulation . . . (e) Establish air traffic rules for the navigation, protection, and identification of aircraft, including rules as to safe altitudes of flight and rules for the prevention of collisions between vessels and aircraft.").

¹⁵⁹ H.R. Rep. No. 69-572, at 9 ("[A]ir space, with its absence of fixed roads and tracks and aircraft with their ease of maneuver, present as to transportation practical and legal problems similar to those presented by transportation by vessels upon the high seas.").

¹⁶⁰ H.R. Rep. No. 69-572, at 10.

¹⁶¹ In 1910 Congress created the Bureau of Lighthouses in the Department of Commerce. 36 Stat. 537 (1910). On July 1, 1939, the president's Reorganization Plan No. 2 transferred the agency to the Coast Guard. 4 F.R. 2731, 53 Stat. 1431. The U.S. Coast and Geodetic Survey was first established in 1878 as part of the Department of the Treasury. Act of June 20, 1878 (20 Stat. 215). In 1903, it was transferred to the Department of Commerce and Labor by the act creating that department, and a decade later to the Department of Commerce. 32 Stat. 825 (1903); 37 Stat. 736 (1913). In 1965, it became folded into the Environmental Science Services Administration (ESSA), Department of Commerce. Reorganization Plan No. 2 of 1965, effective July 13, 1965. The organization was abolished by Reorganization Plan No. 4 of 1970, effective October 3, 1970, which transferred personnel and functions of ESSA to the newly established National Oceanic and Atmospheric Administration, Department of Commerce.

¹⁶² H.R. Rep. No. 69-572, at 9.

provided the constitutional hook.¹⁶³ Only public flight in the navigable air space would be subject to federal control.¹⁶⁴

The Commerce Clause claim reflected the position of the United States in the international system. As an aspect of sovereignty, each country had the right to complete and exclusive control over the airspace above its territory—a right recognized in the 1919 International Convention Relating to the Regulation of Aerial Navigation.¹⁶⁵ The United States never ratified the convention, which was later superseded.¹⁶⁶ Nevertheless, Congress cited it in support of the 1926 act. Under the convention, sovereign control included not just the national territory of the mother country and colonies, but also the adjacent territorial waters.¹⁶⁷

Just two years after Congress passed the Air Commerce Act, the Inter-American Commercial Aviation Convention reiterated the importance of protecting the sovereignty of each country over its airspace.¹⁶⁸ Sovereign control explicitly included the “right to prohibit, for reasons which it deems convenient in the public interest, the flight over fixed zones of its territory by the aircraft of the other contracting states and privately owned . . . aircraft.”¹⁶⁹ International air travel was organized along national lines: like ships, aircraft carried the nationality of the country in which they were registered, which had to be conveyed through special markings.¹⁷⁰

The right to self-defense underlay sovereign control. Accordingly, in 1929 the Protocol to the International Convention Relating to the Regulation of Aerial Navigation established:

Each contracting State is entitled for military reasons or in the interest of public safety to prohibit the aircraft of the other contracting States, under the penalties provided by its legislation and

¹⁶³ H.R. Rep. No. 69-572, at 9 (“The declaration of what constitutes navigable air space is an exercise of the same source of power, the interstate commerce clause, as that under which Congress has long declared in many acts what constitutes navigable or nonnavigable waters.”).

¹⁶⁴ H.R. Rep. No. 69-572, at 9 (“The public right of flight in the navigable air space owes its source to the same constitutional basis which, under decisions of the Supreme Court, has given rise to a public easement of navigation in the navigable waters of the United States, regardless of the ownership of the adjacent or subjacent soil.”).

¹⁶⁵ Convention Relating to the Regulation of Aerial Navigation, Oct. 13, 1919, art. I. (“The High contracting Parties recognize that every Power has complete and exclusive sovereignty over the air space above its territory.”). Hereinafter “1919 International Convention”. See also H.R. Rep. No. 69-572, at 10 (citing the 1919 convention).

¹⁶⁶ 1944 Chicago Convention on International Civil Aviation, ratified by the United States February 20, 1946.

¹⁶⁷ 1919 International Convention, ch. 1.

¹⁶⁸ Inter-American Commercial Aviation Convention (February 20, 1928), art. I. (“The high contracting parties recognize that every state has complete and exclusive sovereignty over the air space above its territory and territorial waters.”). Senate advice and consent to ratification February 20, 1931; ratified by the president March 6, 1931; terminated as to the United States November 29, 1947, 47 Stat. 901.

¹⁶⁹ Inter-American Commercial Aviation Convention, art. 5.

¹⁷⁰ Inter-American Commercial Aviation Convention, arts. 7, 9.

subject to no distinction being made in this respect between its private aircraft and those of the other contracting States, from flying over certain areas of its territory.¹⁷¹

Under the protocol, states could prohibit other countries' aircraft from flying over their territory during peacetime as well.¹⁷² Presaging technologies that have only come to fruition with the advent of drones in the 21st century, the protocol had a special provision applicable to unmanned aircraft: "No aircraft of a contracting State capable of being flown without a pilot shall, except by special authorization, fly without a pilot over the territory of another contracting State."¹⁷³

Following passage of the 1926 Air Commerce Act, the secretary of commerce promulgated new regulations that established an absolute floor of 1,000 feet over cities, towns, and settlements, and 500 feet over all other land "except where indispensable to an industrial flying operation" as a basis for determining navigable airspace.¹⁷⁴ These regulations acknowledged state and landowner control beneath that height.

A number of states adopted parallel provisions. In 1927, for instance, Wyoming defined navigable airspace as "the airspace above the minimum altitudes of flight which are hereby defined to be not less than 1,000 feet over any city, town, or settlement, and not less than 500 feet over any other portion of the state of Wyoming except in case of landing, taking off, or emergencies necessitating lower flight, and excepting lower flight when necessary for industrial operations."¹⁷⁵ In Ohio, the General Act Relative to Aeronautics similarly brought state law into line with the contours of the federal regulations, even as it recognized that it was within the state's purview whether or not to do so.¹⁷⁶ The statute made clear that for policy reasons (uniform regulations and public safety), the state was *choosing* to align its measures with those of the federal government.

In 1930, Ohio's provisions were challenged.¹⁷⁷ The case was brought by R. H. Swetland, who in 1905 had bought 135 acres in a rural area to be used as a country estate. The area was still sparsely settled

¹⁷¹ 1929 Protocol to the International Convention Relating to the Regulation of Aerial Navigation, June 15, 1929 (Paris), art. 3.

¹⁷² 1929 Protocol, art. 3.

¹⁷³ 1929 Protocol, ch. IV.

¹⁷⁴ Air Commerce Regulations (Dec. 1926), Chapter 7, § 74(G).

¹⁷⁵ Regulation of Air Craft, Session Laws of Wyoming, 1927, ch. 72, sec. 2, j.

¹⁷⁶ General Act Relative to Aeronautics, June 26, 1929, 113 Ohio Laws, p. 28.

¹⁷⁷ Early 20th century Ohio history is interwoven with the Wright brothers and the growth of modern aviation. Orville Wright was born in Dayton in 1871, where both he and his older brother Wilbur attended school. In 1889 they became local business owners, opening a print shop and publishing a local newspaper using a printing press that they designed and built. A few years later, they opened a bike shop and began manufacturing bicycles. The brothers went on to test planes at Huffman Field near Dayton and in 1909 founded the Wright Company there. Although Wilbur died, Orville carried on and became a leading national

farmland when in 1929, a Curtiss-Wright subsidiary bought 272 acres directly across the road from Swetland's property to operate an airport and flying school. Swetland immediately responded: the deed ceding the property to Ohio Air Terminals was dated May 23, 1929, and recorded five days later. Swetland sent a letter protesting the purchase on May 29, with legal action commencing June 1. Undeterred, Curtiss Airports built a 20-plane hangar and planned a parking lot for 460 cars.

The question before the court in *Swetland v. Curtiss Airports Corporation* was whether the Ohio state law in question was a reasonable exercise of the police power, as well as whether *ad coelum* established such property rights in a landowner as to make overflight either a nuisance or a trespass.¹⁷⁸ Looking to the state laws facilitating the growth of air travel, the court took judicial notice of the fact that “although aviation is still to some extent in the experimental stage, it is of great utility in times of peace, and will be a great protection to the nation in times of war. In fact, it is indispensable to the safety of the nation that airports and flying schools such as contemplated by the defendants be encouraged in every reasonable respect.”¹⁷⁹ With state measures regulating it, the only way the airport could be a nuisance was if it was “located in an unsuitable location” or was “operated so as to interfere unreasonably with the comfort of adjoining property owners.”¹⁸⁰ While the warm-up of airplanes and their flight over the neighbors' property might be noisy, it was not to “such a degree as to annoy persons of ordinary sensibilities.”¹⁸¹ Nor was dust an issue, because the airport could simply install concrete runways or use runways with a sufficient amount of grass.¹⁸² Crowds did not present a concern. The court had refused to enjoin amusement parks, for instance, merely on those grounds.¹⁸³ Once the novelty had worn off, moreover, fewer people would come. Dropping leaflets or putting up lights might be a nuisance, but such actions could be enjoined as necessary.¹⁸⁴

Having rejected the airport as constituting a nuisance, the court turned to allegations of trespass. “An owner's rights in land in this state are amply protected by constitutional guaranties,” the court wrote, “but what those rights are, so far as air space above the land is concerned, has not been declared by legislation,

figure, serving, inter alia, as an advisor to the National Advisory Committee for Aeronautics—the predecessor to the National Aeronautics and Space Administration. See generally “Wright Brothers,” Ohio History Central, Ohio History Connection. Because of the Wright brothers, “Ohio regards itself as the mother state of aviation.” *Swetland v. Curtiss Airports Corp.*, 41 F.2d 929, 932 (N.D. Ohio 1930). Ohio was among the first states to pass laws to provide for municipal airports. See Ohio General Code, § 3677; *State ex rel. Chandler v. Jackson*, 121 Ohio St. 186, 167 N.E. 396 (1929). And the issuance of bonds for that purpose. Ohio General Code, § 3939; *State v. City of Cleveland*, 26 Ohio App. 265, 160 N.E. 241 (1937).

¹⁷⁸ 41 F.2d 929.

¹⁷⁹ 41 F.2d at 932.

¹⁸⁰ 41 F.2d at 932.

¹⁸¹ 41 F.2d at 932.

¹⁸² 41 F.2d at 933.

¹⁸³ 41 F.2d at 933.

¹⁸⁴ 41 F.2d at 933.

nor have such rights been fixed by the courts. That the landowner's rights are not limited to the surface of the earth, but extend into the space above it, is settled by many well-considered cases."¹⁸⁵

The court addressed *ad coelum*: "The venerability of this maxim, its frequent repetition, and the high standing of many of those who have relied upon it, not only warrant, but call for, a careful consideration of its origin and application in adjudicated cases."¹⁸⁶ In none of the cases, though, had the maxim been applied explicitly to air travel. The salient question was at what point the *coelum* was reached. According to Professor Hiram Jome, the clause, as employed by Latin writers meant the lower airspace, where birds fly and clouds drift, rain falls and lightning strikes.¹⁸⁷ "Occasionally," Jome wrote, "it meant God, 'heaven the home of the happy dead,' and the resting place of the stars."¹⁸⁸ Consulting treatise writers on torts law, the court noted that a number of them recognized ownership in airspace appurtenant to land, up to a reasonable height.¹⁸⁹ The court could not find any constitutional or legislative provisions or statutes that had established the exclusive proprietary right "in a landowner to the superincumbent air space normally traversed by the aviator."¹⁹⁰

Because the establishment of a 500-foot minimum altitude rule seemed to be a reasonable exercise of federal power—and one with which the Ohio legislature appeared to agree, flight at that height was legal. Below that, however, it was "conceivable and very probable" that pilots could not interfere with the landowner's "effective possession" of the airspace.¹⁹¹

On appeal, the Sixth Circuit observed that "the law reports of practically every state" refer to *ad coelum*; however, the right was not absolute: "we cannot hold that in every case," the court wrote, "it is a trespass against the owner of the soil to fly an aeroplane through the air space overlying the surface."¹⁹² Nevertheless, "[t]his does not mean that the owner of the surface has no right at all in the air space above his land. He has a dominant right of occupancy for purposes incident to his use and enjoyment of the surface, and there may be such a continuous and permanent use of the lower stratum which he may reasonably expect to use or occupy himself as to impose a servitude upon his use and enjoyment of the

¹⁸⁵ 41 F.2d at 935.

¹⁸⁶ 41 F.2d at 935.

¹⁸⁷ 41 F.2d at 937, citing and quoting Hiram L. Jome, "Property in the Air As Affected by the Airplane and the Radio", *American Law Review* 62 (1928): 894–95.

¹⁸⁸ 41 F.2d at 937.

¹⁸⁹ 41 F.2d at 937.

¹⁹⁰ 41 F.2d at 938.

¹⁹¹ 41 F.2d at 943.

¹⁹² *Swetland v. Curtiss Airports Corporation*, 55 F.2d 201, 203 (6th Cir. 1932).

surface.”¹⁹³ The landowner could not “reasonably expect to occupy” the upper stratum. Here, the only right of the landowner was “to prevent the use of it by others to the extent of an unreasonable interference with his complete enjoyment of the surface.”¹⁹⁴ While interference amounted to a trespass in the lower strata, in the upper strata, only an action for nuisance could lay. The court was unable to “fix a definite and unvarying height below which the surface owner may reasonably expect to occupy the air space for himself.”¹⁹⁵ Such a designation would be fact-dependent. For this case, it was sufficient to say that the defendants were in the upper strata, above the 500-foot floor. No trespass therefore had occurred. As a matter of nuisance, however, the airport had already interfered with the family’s enjoyment of the property and depreciated its value.

In his concurrence, Judge Smith Hickenlooper, a Calvin Coolidge appointee, rejected the idea that trespass could only occur at the lower strata. Higher up, “although a single flight over the plaintiff’s land may not constitute a trespass, such flights may be so continuous as in the aggregate to do so.”¹⁹⁶ As a logical matter, for the aggregate of a large number of flights to constitute a trespass, “it must be because each of the said flights is itself a trespass.”¹⁹⁷

With property rights firmly in the hands of the states, a Uniform Licensing Act was proposed in 1930.¹⁹⁸ The National Conference of Commissioners on Uniform State Laws supplemented the statute in 1935 with a Uniform Aeronautical Regulatory Act. The model law made it mandatory for all pilots to hold federal licenses and added state supervisory authority to license airports, educational institutions, clubs, and other associated areas.¹⁹⁹ It further provided for municipalities and counties to acquire, construct, and regulate airports.²⁰⁰ While not adopted *in toto* by all states, many of the provisions of these acts found their way into state law.²⁰¹

States had the lead. *Cujus est solum, ejus est usque ad coelum et ad inferos* was considered by scholars “one of the most firmly and permanently established rules of our common law.”²⁰² Nevertheless, the federal government continued to push for control of airspace. As a consequence, the early 1930s saw a

¹⁹³ 55 F.2d at 203.

¹⁹⁴ 55 F.2d at 203.

¹⁹⁵ 55 F.2d at 203.

¹⁹⁶ 55 F.2d at 204–5.

¹⁹⁷ 55 F.2d at 205.

¹⁹⁸ Uniform Licensing Act of 1930, 11 Uniform Laws Anno. 185.

¹⁹⁹ Uniform Aeronautical Regulatory Act, 11 Uniform Laws Anno. 173.

²⁰⁰ 11 Uniform Laws Anno. 193.

²⁰¹ Plaine, “State Aviation Legislation,” p. 335.

²⁰² Logan, “Aviation and the Maxim *Cujus Est Solum*,” p. 304.

sudden spate of scholarship on the implications of air travel for the historical protection of property owners over the airspace adjacent to their land, as well as for the federalism divide.²⁰³ It also prompted the creation of a new journal, the *Journal of Air Law and Commerce*, whose editorial stance rather weighted the deck in favor of the feds.

<b head>Civil Aeronautics Act of 1938</b head>

The Civil Aeronautics Act of 1938 marked a significant shift in federal control. The statute was largely driven by safety concerns. At that point, some 17,681 licensed civil pilots were flying 7,300 licensed civil airplanes between 2,327 airports.²⁰⁴ The commercial aspects of flight were beginning to take off: 1,250,000 passengers per year and over 1.25 billion pound-miles of mail per month were being transported by air.²⁰⁵ Simultaneously, in what appeared to be a race to the bottom, as competition increased, carriers tried to cut costs, potentially undermining passenger safety.²⁰⁶ Following a series of harrowing air incidents, the Senate directed the Committee on Commerce to investigate and to report on how best to improve air safety.²⁰⁷ In debating the resolution, on Senator explained, “[T]his bill will not only promote an orderly development of our Nation’s civil aeronautics, but by its immediate enactment prevent the spread of bad practices and of destructive and wasteful tactics resulting from the intense competition now existing within the air-carrier industry.”²⁰⁸ Regulating the air industry appeared, from a federal perspective, to be no different than regulating other public utilities.

Congress proclaimed in the 1938 statute,

The United States of America is hereby declared to possess and exercise complete and exclusive national sovereignty in the air space above the United States, including the air space above all inland waters and the air space above those portions of the adjacent marginal high seas, bays, and

²⁰³ See, e.g., Arnold D. McNair, *The Law of the Air* (London: Butterworth and Co., 1932); Logan, “Aviation and the Maxim *Cujus Est Solum*,” p. 306; Arthur L. Newman, II, “Aviation Law and the Constitution,” *Yale Law Journal* 39 (1930): 1113; Carl Zollmann, “Aircraft as Common Carriers,” *Journal of Air Law and Commerce* 1, no. 2 (1930): 190; Reed G. Landis, “State Agencies of Control and Enforcement of Aeronautical Laws,” *Journal of Air Law and Commerce* 1, no. 2 (1930): 186; Fred D. Fagg Jr., “Incorporating Federal Law into State Legislation,” *Journal of Air Law and Commerce* 1, no. 2 (1930): 199; Chester W. Cuthel, “Development of Aviation Laws in the United States,” *Air Law Review* 1 (1930): 86; Sweeney, “Adjusting the Conflicting Interests of Landowner and Aviator in Anglo-American Law,” pp. 531–616.

²⁰⁴ Civil Aeronautics Act of 1938, S. Rep. No. 75-1661, at 2 (1938).

²⁰⁵ S. Rep. No. 75-1661, at 2.

²⁰⁶ S. Rep. No. 75-1661, at 2.

²⁰⁷ S. Res. 146, 74th Cong., 1st sess. (1935).

²⁰⁸ S. Rep. No. 75-1661, at 2 (Senator Royal Copeland)

lakes, over which by international law or treaty or convention the United States exercises national jurisdiction.²⁰⁹

This statement went considerably beyond the 1926 act, which had claimed sovereignty vis-à-vis *other countries*, but not as against the states.²¹⁰ The Supreme Court later rejected Congress's claim, noting that the 1926 statute had not "expressly exclude[d] the sovereign powers of the states."²¹¹ To the extent that Congress was laying claim to matters within state jurisdiction, it was intruding on a constitutionally protected area. States retained control over the airspace immediately above state land and waters. No less than three provisions of the uniform act adopted by the states had asserted this authority.²¹²

The Civil Aeronautics Act laid out a complex structure to ensure air safety. It established regulations for licensing pilots, aircraft, and air carriers and for maintaining equipment.²¹³ It created an Air Safety Board and incorporated civil and criminal penalties for failing to meet the requirements laid out in the act.²¹⁴ It introduced a range of regulations applicable to both domestic and foreign air carriers and the transportation of mail.²¹⁵ The act transferred responsibility from the Bureau of Air Commerce to a new, independent agency, the Civil Aeronautics Authority (CAA), which was tasked with regulating air transportation, encouraging foreign and domestic commerce, improving the mail service, and providing for matters related to national defense.²¹⁶ From 1938 to 1939, the CAA examined 2,668 accidents and made recommendations.²¹⁷ The agency went on to analyze passenger flow and the need for new routes, airmail pricing, and transatlantic trade, and to participate in international discussions about aviation regulation.²¹⁸ The CAA also operated a Bureau of Safety Regulations, which took on pilot and mechanic

²⁰⁹ Civil Aeronautics Act of 1938, § 1107(i)(3).

²¹⁰ See Air Commerce Act of 1926, Pub. L. 69-254, § 6 (stating "that the Government of the United States has, to the exclusion of all foreign nations, complete sovereignty of the airspace over the lands and waters of the United States.").

²¹¹ *Braniff Airways, Inc. v. Neb. State Bd. of Equalization & Assessment*, 347 U.S. 590, 595 (1954). See also H.R. Rep. No. 69-572, at 10.

²¹² See Uniform Aeronautics Act § 4 (Uniform Law Commission 1922), § 2 ("Sovereignty in the space above the lands and waters of this State is declared to rest in the State, except where granted to and assumed by the United States pursuant to a constitutional grant from the people of this State."), § 3 ("The ownership of the space above the lands and waters of this State is declared to be vested in the several owners of the surface beneath, subject to the right of flight described in Section 4."), § 4 ("Flight in aircraft over the lands and waters of this State is lawful, unless at such a low altitude as to interfere with the then existing use to which the land or water, or the space over the land or water, is put by the owner, or unless so conducted as to be imminently dangerous to persons or property lawfully on the land or water beneath. The landing of an aircraft on the lands or waters of another, without his consent, is unlawful, except in the case of a forced landing. For damages caused by a forced landing, however, the owner or lessee of the aircraft or the aeronaut shall be liable. . . .").

²¹³ Civil Aeronautics Act of 1938, 52 Stat. 973, §§ 601–10.

²¹⁴ 52 Stat. 973, §§ 701–2 (air safety board); §§ 901–3 (civil penalties, criminal penalties, and venue for prosecution).

²¹⁵ 52 Stat. 973, §§ 401–16.

²¹⁶ 52 Stat. 973, §§ 201–6.

²¹⁷ First Annual Report of the Civil Aeronautics Authority: Fiscal Year Ended June 30, 1939, with Additional Activities to November 1939 (Washington: Government Printing Office, 1940), pp. 39–41.

²¹⁸ Second Annual Report of the Civil Aeronautics Authority: Fiscal Year Ended June 30, 1940 (Washington: Government Printing Office, 1940), pp. 1–14.

certification, aircraft inspection, and other matters.²¹⁹ It further ran a training program, coordinating with 435 colleges and 528 flight schools to train and certify some 8,313 new pilots.²²⁰ Over the course of fiscal year 1940, there were zero aviation-related fatalities across the United States.²²¹

States continued to serve as the lead for control of the land. Accordingly, in 1939 the CAA, together with the National Institute of Municipal Law Officers, wrote a Model Airport Zoning Act for the states.²²² It underwent several revisions, with the aim, as one scholar explains, of empowering states

to promulgate, administer and enforce under the state police power, airport zoning regulations limiting the height of structures and objects of natural growth and otherwise regulating the use of property in the vicinity of public airports, and to acquire by purchase, grant or condemnation, air rights and other interests in land, for the purpose of preventing obstruction of the airports' approaches.²²³

By 1947, most states had adopted the measures. The partnership between states and the federal government took further form with the 1946 Federal Airport Act, which provided a \$500 million grant over a seven-year period to states and municipalities interested in building airports.²²⁴ In 1950, the act was extended to 1958, with funding provided for runways and taxiways.²²⁵ Further laws extended funding until the act was finally repealed and replaced by the Airport and Airway Development Act of 1970.²²⁶ In 1958 the CAA became the Federal Aviation Agency (later the Federal Aviation Administration).²²⁷

<b head>Of Nuisance and Trespass</b head>

Aircraft traveling over farmland presented a particular risk of stress on livestock. This issue came to the fore in Nebraska fairly early on in *Glatt v. Page*.²²⁸ The court prohibited any flights under 500 feet over the plaintiff's house and under 250 feet over adjoining fields outside of takeoff and landing. The court was careful to note the special risks at that time, as "flying . . . at an altitude of less than 100 feet will

²¹⁹ Second Annual Report of the Civil Aeronautics Authority, pp. 14–22.

²²⁰ Second Annual Report of the Civil Aeronautics Authority, pp. 22–23.

²²¹ Second Annual Report of the Civil Aeronautics Authority, p. 5.

²²² Plaine, "State Aviation Legislation," p. 336.

²²³ Plaine, "State Aviation Legislation," p. 336.

²²⁴ Federal Airport Act of 1946, Pub. L. No. 377.

²²⁵ Federal Airport Act Extension, Pub. L. No. 81-846, 64 Stat. 1071.

²²⁶ Airport and Airway Development Act of 1970, Pub. L. No. 91-258, 49 U.S.C. 1730.

²²⁷ Federal Aviation Act of 1958, Pub. L. No. 85-726; 72 Stat. 737.

²²⁸ *Glatt v. Page*, District Court, 3d Jud. Dist. of Neb., Docket 93-115 (1928).

ordinarily frighten teams at work . . . and thereby render cultivation of plaintiff's land in that vicinity difficult and hazardous." Frequent flight at this level, "constitutes a damage to the plaintiffs and an impairment of the use and enjoyment of said premises which goes with the land and belongs to plaintiffs as well as the soil thereof."²²⁹

In 1946, the Supreme Court came to a similar conclusion, recognizing that as a corollary to land owner rights *ad coelum*, repeated use of the airspace above a farmer's property for takeoff and landing constituted a Fifth Amendment taking. In *United States v. Causby*, despite the federal government's bald assertion of "exclusive national sovereignty" and the right of freedom in air transit, the Court came down on the side of the landowner's property rights.²³⁰ A chicken farm, located near an airport routinely used by the military, essentially had been subjected to a servitude. While *cujus est solum ejus est usque ad coelum* recognized ownership to the periphery of the universe, it proved ill-fitting in the modern world.²³¹ Air above the minimum safe altitude of flight, like a public highway, amounted to the public domain. However, anything below the navigable air space was not. It was in the full control of the owner: "The landowner owns at least as much of the space above the ground as he can occupy or use in connection with the land. The fact that he does not occupy it in a physical sense—by the erection of buildings and the like—is not material."²³² The Court explained, "The superadjacent airspace at [a] low altitude is so close to the land that continuous invasions of it affect the use of the surface of the land itself. We think that the landowner, as an incident to his ownership, has a claim to it and that invasions of it are in the same category as invasions of the surface."²³³ The immediate reach of adjacent airspace thus belonged to the landowner.

The Court recognized that the problem of granting the federal government control over the lower airspace would give them "complete dominion and control over the surface of the land."²³⁴ This would eviscerate federalism as well as property rights.

Following *Causby*, Congress redefined "navigable airspace" to mean "airspace above the minimum altitudes of flight prescribed by regulations issued under this chapter," including "airspace needed to insure [sic] safety in take-off and landing of aircraft."²³⁵

²²⁹ Glatt v. Page, Decree of District Court, par. 5.

²³⁰ *United States v. Causby*, 328 U.S. 256 (1946).

²³¹ *Causby*, 328 U.S. at 260–61.

²³² 328 U.S. at 264.

²³³ 328 U.S. at 265.

²³⁴ 328 U.S. at 262.

²³⁵ 72 Stat. 739, 49 U.S.C. § 1301(24), 49 U.S.C.A. § 1301(24).

In 1962, the Supreme Court had to ascertain whether, under new definition, takeoff and landing areas abrogated property rights.²³⁶ In *Griggs v. Allegheny*, the Supreme Court again recognized that landowners own the airspace above their property: “[T]he use of land presupposes the use of some of the airspace above it. Otherwise, no home could be built, no tree planted, no fence constructed, no chimney erected. An invasion of the superadjacent airspace will often affect the use of the surface of the land itself.”²³⁷ The imposition of a glide path above someone’s property amounted to a taking. Any exercise of dominion over adjacent airspace would have to be compensated.

<a head>Concluding Remarks<a head>

With the history of *ad coelum* and state police powers in mind, one could be forgiven for being surprised by contemporary federal claims to airspace related to the proliferation of UAS technologies. Navigable airspace, as an anchor for expanded federal control, cannot extend to the ground without violating property rights and state sovereignty.

This does not mean that Congress has no role to play. To the extent that unmanned aircraft of any sort travel 500 feet above the ground, they would be subject to the provisions governing other aircraft. So, too, would federal control extend to the safety of aircraft ascending and descending from airports. In 2012, for instance, the FAA Modernization and Reform Act prohibited the FAA from regulating model aircraft weighing less than 55 pounds, unless they were flown within five miles of an airport.²³⁸

But the federal government is now attempting to bring the floor of navigable airspace ever lower: under the FAA Reauthorization Act of 2018, the hobbyist carve-out is limited to 400 feet above ground level.²³⁹ The FAA is placing restrictions on flying drones at night and requiring users to register their drones and fly within visual line of sight. In addition, the FAA now imposes flight restrictions on recreational drone operators—such as when Pope Francis visited Philadelphia in 2015.²⁴⁰

To the extent that the FAA is attempting to cast its net more widely, property rights and state authority present an important limitation. Numerous states already have asserted their constitutional

²³⁶ *Griggs v. Allegheny*, 369 U.S. 84, 85 (1962).

²³⁷ 369 U.S. at 89.

²³⁸ FAA Modernization and Reform Act of 2012, § 336(a).

²³⁹ FAA Reauthorization Act of 2018, Pub. L. No. 115-254.

²⁴⁰ FAA, Flight Advisory: National Special Security Event, Papal Visit, Philadelphia, PA, September 26–27, 2015.

power to regulate drones.²⁴¹ Some states, such as California and Louisiana, do not put any ceiling on the air above private property.²⁴² Any entry is considered a trespass. Where ceilings *have* been set, they range from 250 feet above the ground (Nevada) up to 500 feet above property (Tennessee)—a number reflecting the navigable airspace, as established in the Code of Federal Regulations. (Tennessee code defines criminal trespass to include an unmanned aircraft entering the portion of airspace above an owner’s land not regulated by the FAA as navigable airspace.²⁴³ In Nevada, the state legislature has prohibited flying a drone within 500 feet of any critical infrastructure.²⁴⁴ A small unmanned aircraft flying lower than 500 feet does not expand the federal government’s jurisdiction.

The FAA is now contemplating regulation of commercial drones that may fly over public roads—property held by the state. In 1959 the Supreme Court recognized the importance of state sovereignty, even in the face of Commerce Clause claims:

The power of the State to regulate the use of its highways is broad and pervasive. We have recognized the peculiarly local nature of this subject of safety, and have upheld state statutes applicable alike to interstate and intrastate commerce, despite the fact that they may have an impact on interstate commerce.²⁴⁵

The Court had long recognized state power over public highways. In 1938, the Supreme Court considered a South Carolina statute regulating the size of vehicles that could use its roads.²⁴⁶ The trial court had determined that the statute unreasonably burdened interstate commerce.²⁴⁷ The Supreme Court saw it rather differently: “South Carolina has built its highways and owns and maintains them. While the constitutional grant to Congress of power to regulate interstate commerce has been held to operate of its own force to curtail state power in some measure” it does not so impact *all* actions affecting interstate commerce.²⁴⁸ The Court noted that since 1829:

²⁴¹ For a comprehensive treatment of state drone law, see Laura K. Donohue, “A Tale of Two Sovereigns: Federal and State Use and Regulation of Unmanned Aircraft Systems,” in *Handbook of Unmanned Aerial Vehicles*, 2nd ed., ed. Kimon P. Valavanis and George J. Vachtsevanos (New York: Springer International Publishing AG, 2017); National Conference of State Legislatures, “Current Unmanned Aircraft State Law Landscape.” For a few examples of state measures see Cal. Civ. Code § 853 (2017); La. Stat. Ann. § 14:63 (2016); Nev. Rev. Stat. Ann. § 493.103(1) (2015); N.C. Gen. Stat. Ann. § 15A-300.1(b) (2016); Or. Rev. Stat. Ann. § 837.380(1) (2016); Tenn. Code Ann. §§ 39-13-903(a)(1), (3) (2016).

²⁴² See, e.g., Cal. Civ. Code § 1708.8(b) (2015); La. Stat. Ann. § 14:63 (2016).

²⁴³ Tenn. Code Ann. § 39-14-405 (2016).

²⁴⁴ Nev. Rev. Stat. Ann. § 493.109 (2015).

²⁴⁵ *Bibb v. Navajo Freight Lines, Inc.*, 359 U.S. 520, 523 (1959).

²⁴⁶ *South Carolina State Highway Dept. v. Barnwell Bros.*, 303 U.S. 177, 180 (1938).

²⁴⁷ 303 U.S. at 182.

²⁴⁸ 303 U.S. at 184–85.

[I]t has been recognized that there are matters of local concern, the regulation of which unavoidably involves some regulation of interstate commerce but which, because of their local character and their number and diversity, may never be fully dealt with by Congress.

Notwithstanding the commerce clause, such regulation in the absence of congressional action has for the most part been left to the states by the decisions of this Court.²⁴⁹

In the context of regulating vehicles traveling along the ground, there was nothing to indicate that the states would have to “curtail[] their power to take measures to insure the safety and conservation of their highways which may be applied to like traffic moving intrastate.”²⁵⁰

Presumably, the Court will take the same view of drones. Like sUAS, vehicles, and the routes they traveled, mattered: “[f]ew subjects of state regulation are so peculiarly of local concern as is the use of state highways.”²⁵¹ States play the primary role in building them. They own them. They maintain them. “The state,” moreover, “has a primary and immediate concern in their safe and economical administration.”²⁵² States have an even greater interest in things that travel through the air and impact the people and vehicles below. Virtually any regulation of the roads (or the air) could affect interstate commerce—but this did not, in any way, diminish the strong state interest in regulating its own highways. For the Court, South Carolina was well within its Constitutional power to act.²⁵³

The Court came to the same conclusion about a Pennsylvania statute that prohibited any cars carrying other vehicles over the head of the vehicle operator.²⁵⁴ The Court explained that highways “are state owned, and, in general, are open in each state to use by privately owned and controlled motor vehicles of widely different character.”²⁵⁵ More sensitive than the federal government to local needs and conditions, states had long had been in charge of the safety of their roads.²⁵⁶ The effort by the federal government to assert national control raised “problems of peculiar difficulty and delicacy.”²⁵⁷ Ensuring road safety constituted a legitimate exercise of state police power.²⁵⁸

²⁴⁹ 303 U.S. at 185.

²⁵⁰ 303 U.S. at 187.

²⁵¹ 303 U.S. at 187.

²⁵² 303 U.S. at 196.

²⁵³ 303 U.S. at 196.

²⁵⁴ *Maurer v. Hamilton*, 309 U.S. 589 (1940). Under the 1935 Motor Carrier Act, the Interstate Commerce Commission promulgated regulations to govern the “safety of operation and equipment” of cars in interstate commerce. The regulations failed to address trucks carrying cars over the cab.

²⁵⁵ 309 U.S. at 604–5.

²⁵⁶ 309 U.S. at 605.

²⁵⁷ 309 U.S. at 605.

²⁵⁸ 309 U.S. at 598.

Just because the federal government has acted does not divest states of their core authority. As the Supreme Court explained in yet another case dealing with a state motor vehicle provision:

An examination of the acts of Congress discloses no provision, express or implied, by which there is withheld from the state its ordinary police power to conserve the highways in the interest of the public and to prescribe such reasonable regulations for their use as may be wise to prevent injury and damage to them.²⁵⁹

For the Supreme Court, the regulation of state highways was “akin to quarantine measures, game laws, and like local regulations of rivers, harbors, piers, and docks, with respect to which the state has exceptional scope for the exercise of its regulatory power, and which, Congress not acting, have been sustained even though they materially interfere with interstate commerce.”²⁶⁰

For cases coming to the Court, state control over use of land within its bounds is presumed to be constitutionally valid—even if it interferes with interstate commerce, unless there is an *excessive* burden placed on it.²⁶¹ In 2002, a parallel effort to establish federal preeminence over states in regard to aerial advertising failed. Skysign International, which was operating under an FAA certificate of waiver, flew over densely populated areas in violation of a municipal ordinance.²⁶² Prior to introducing the ordinance, Honolulu had twice asked the FAA whether the federal measure preempted its ability to regulate the airspace and had been informed, on both occasions, that it did. The FAA, however, had been mistaken. The Ninth Circuit, ruling for Honolulu, observed that advertising is one of those areas that traditionally falls within the state domain. The federal government could not displace that authority without a clear statement that it intended to do so—which could itself be challenged.

Congress, in claiming sovereignty over U.S. airspace as an exercise of international control did not eviscerate domestic divisions. Instead, as the Court in *Braniff* noted, it was merely “an assertion of exclusive national sovereignty that did not expressly exclude the sovereign powers of the states.”²⁶³ States and, through them, property owners, control the airspace above the land. Should federal power be understood as extending to all airspace above land and roads, it would so eviscerate state police powers

²⁵⁹ *Sproles v. Binford*, 286 U.S. 374, 389–90 (1932), quoting *Morris v. DUBY*, 274 U.S. 135, 143 (1927).

²⁶⁰ *S. Pac. Co. v. Arizona ex rel. Sullivan*, 325 U.S. 761 (1945).

²⁶¹ *Bibb v. Navajo Freight Lines, Inc.*, 359 U.S. 520 (1959).

²⁶² *Skysign Int'l, Inc., v. Honolulu*, 276 F.3d 1109, 1113 (2002).

²⁶³ 276 F.3d at 1116 (internal quotations and citations omitted).

over property as to render them virtually nonexistent. This approach would fly in the face of *ad coelum* and state sovereignty, long considered at the very core of U.S. law.